



**Planning &
Infrastructure**

***MAJOR PROJECT ASSESSMENT:
Residential Buildings R8 and R9,
Barangaroo South
(MP 11_0002)***



R8



R9

Director-General's
Environmental Assessment Report
Section 75I of the
Environmental Planning and Assessment Act 1979
June 2013

ABBREVIATIONS

CIV	Capital Investment Value
Department	Department of Planning & Infrastructure
DGRs	Director-General's Requirements
Director-General	Director-General of the Department of Planning & Infrastructure
EA	Environmental Assessment
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
EPI	Environmental Planning Instrument
MD SEPP	State Environmental Planning Policy (Major Development) 2005
Minister	Minister for Planning and Infrastructure
PAC	Planning Assessment Commission
Part 3A	Part 3A of the <i>Environmental Planning and Assessment Act 1979</i>
PEA	Preliminary Environmental Assessment
PFM	Planning Focus Meeting
PPR	Preferred Project Report
Proponent	Lend Lease (Millers Point) Pty Limited
RTS	Response to Submissions

Cover Photograph: Illustrations of residential buildings R8 (top) and R9 (bottom)

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EXECUTIVE SUMMARY

This report is an assessment of a project application (MP11_0002) lodged by Lend Lease (Millers Point) Pty Limited (the proponent) seeking approval for the construction of two residential buildings referred to as R8 and R9 within Block X at Barangaroo South.

The project application also seeks approval for the demolition of hard stand areas and site establishment works, piling and earthworks, remediation, use and allocation of 176 car parking spaces within the approved basement car park, public domain works, and services and utilities provision required to service the development.

Residential building R8 is a 9-11 storey building comprising retail floor space at ground floor level (807m²) and 82 apartments above (8,862m²). R8 was designed by architectural firm FJMT. Residential Building R9 is a 7-9 storey building also comprising retail floor space at the ground floor level (815m²) and 77 residential apartments above (7,595m²). R9 was designed by PTW. The capital investment value (CIV) for the project is \$100,000,000. The project would create 600 construction jobs and provide sufficient floor space to accommodate approximately 135 operational positions.

As Director-General's Requirements (DGRs) were issued for the project prior to 1 October 2011, Part 3A of the EP&A Act, as in force immediately before its repeal on 1 October 2011, and as modified by Schedule 6A to the Act, continues to apply to these projects. Consequently, the project is a transitional Part 3A project.

The Barangaroo site is listed as a State Significant Site under Part 12 of Schedule 3 of the Major Development SEPP. The SEPP zones the site on which the buildings are located, B4 Mixed Use, with the public domain works proposed within the RE1 Public Recreation zone. The project is permissible in the zones, subject to project approval.

The environmental assessment (EA) was exhibited for a 31-day period from 21 November 2012 until 21 December 2012. The department received one submission from the public and five submissions from government agencies, including the City of Sydney. The key issues raised in the submissions included compliance with the Barangaroo Concept Plan, built form and urban design, residential amenity, transport and traffic, and contamination and remediation.

On 15 May 2013, the proponent submitted a Preferred Project Report (PPR) for the project, including a response to submissions. While key changes to the project included minor reductions in residential and retail GFA, façade, balcony and rooftop alterations, and internal layout amendments, these were made as a result of ongoing design development. Issues raised by government agencies during the exhibition period have been addressed in the response to submissions (i.e. by providing additional information), particularly in relation to affordable housing.

The department has assessed the merits of the project and is satisfied that the impacts associated with the construction and operation of the residential buildings have been adequately addressed in the EA, PPR and the proponent's Statement of Commitments (SOCs), and can be satisfactorily managed through the recommended conditions of approval.

The NSW Government Architect reviewed the project on behalf of the Director-General and concluded that the buildings achieve design excellence. The Director-General agreed with the NSW Government Architect's view and waived the requirement for a design competition for the development on 20 June 2013, pursuant to clause 19 of Part 12 of Schedule 3 of the Major Development SEPP 2005 and Condition C2(7) of the Barangaroo Concept Plan approval.

The proposal is generally consistent with the approved Barangaroo Concept Plan (as amended), strategic planning objectives, and will facilitate the future development of the Barangaroo site. Accordingly, the department considers that the project is in the public interest and recommends approval of the project, subject to conditions detailed in this environmental assessment.

1. BACKGROUND

1.1 The Site

Barangaroo is located on the north-western edge of the Sydney CBD. The site is bounded by the Sydney Harbour foreshore to the north and west, Hickson Road and Millers Point to the east, and Kings Street Wharf/Cockle Bay/Darling Harbour to the south. The Barangaroo precinct is divided into three parts: Headland Park; Barangaroo Central; and Barangaroo South. The area of land the subject of the project application for the buildings is located at Barangaroo South, within Block X of the Barangaroo Concept Plan. A Location Plan is provided at **Figure 1** below.

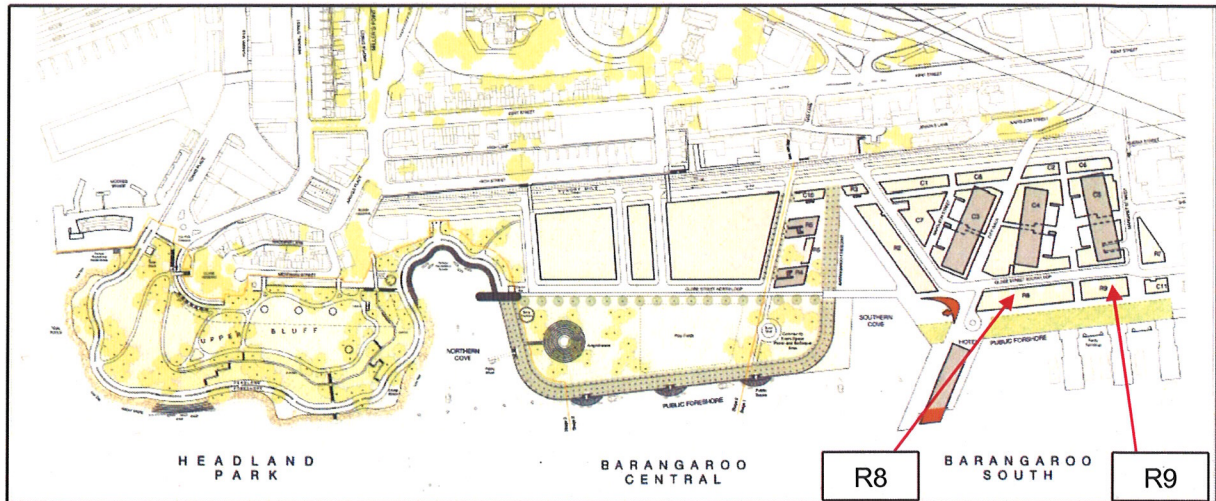


Figure 1: Location Plan

1.2 Approval History

1.2.1 Approved Concept Plan

On 9 February 2007, the then Minister for Planning approved the Barangaroo Concept Plan (MP 06_0162). The Concept Plan approved a set of built form principles to guide development within the mixed use zone. The Concept Plan has been modified four times since approval.

The most current version of the Concept Plan (MOD 4) was approved by the then Minister for Planning on 16 December 2010, and permits:

- A mixed use development involving a maximum of 563,965m² gross floor area (GFA), comprised of:
 - (a) a maximum of 128,763m² and a minimum of 84,595m² residential GFA
 - (b) a maximum of 50,000m² GFA for tourist uses
 - (c) a maximum of 39,000m² GFA for retail uses
 - (d) a maximum of 4,500m² GFA for active uses in the Public Recreation zone (3,000m² of which will be in Barangaroo South)
 - (d) a minimum of 12,000m² GFA for community uses (10,000m² of which will be in Barangaroo South).
- Approximately 11 hectares of new public open space/public domain, with a range of formal and informal open spaces serving separate recreational functions and including an approximate 2.2km public foreshore promenade;
- Built form and urban design principles, maximum building heights and GFA for each development block within the mixed use zone;
- Public domain landscape concept, including parks, streets and pedestrian connections; and
- Works to the existing seawalls and creation of a partial new shoreline to the harbour.

The approved configuration of the development blocks within Barangaroo South is depicted in **Figure 2** overleaf.

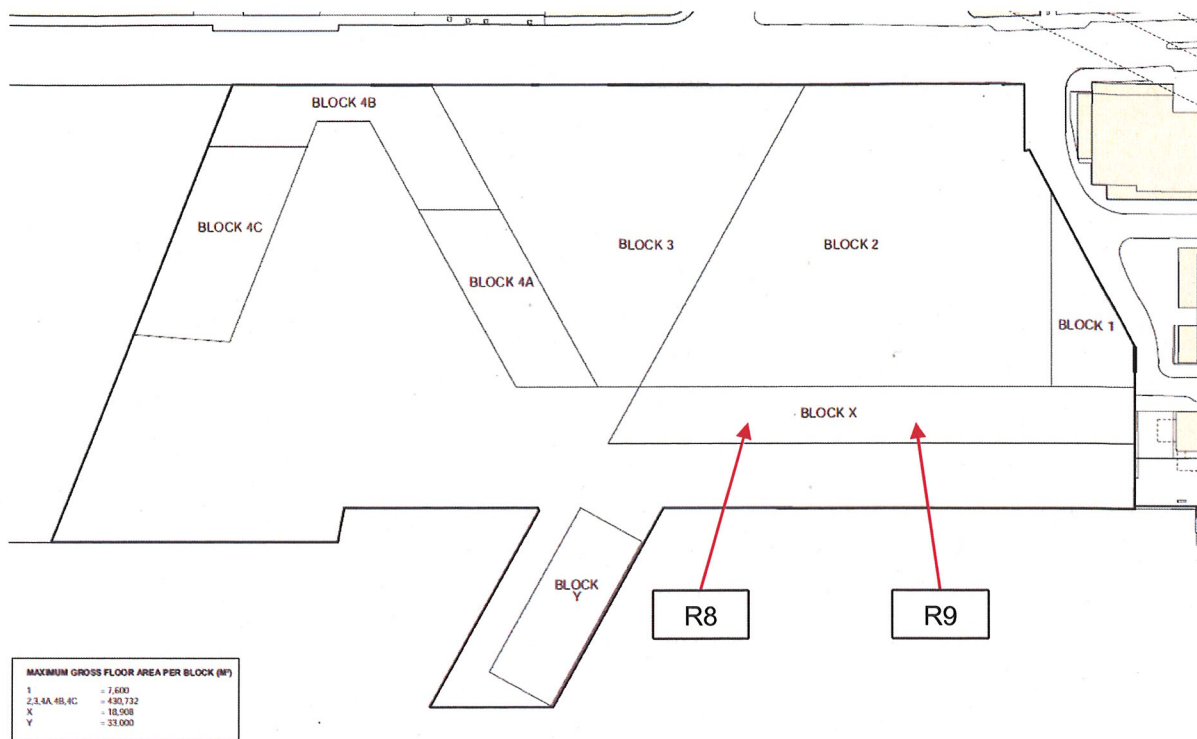


Figure 2: Barangaroo South Approved Block Configuration

1.2.2 State Significant Site Listing

On 12 October 2007, State Environmental Planning Policy (Major Projects) 2005 (Amendment No. 18) was gazetted. Amendment 18 modified the then Major Projects SEPP, now known as the Major Development SEPP (MD SEPP), by listing Barangaroo as a State Significant Site (SSS), and providing development and design excellence controls in Schedule 3.

A subsequent amendment to Schedule 3, Part 12 of the MD SEPP was gazetted on 16 December 2010. The purpose of the amendment was to rectify inconsistencies between the SEPP and the Barangaroo Concept Plan that arose as a result of modifications to the Concept Plan.

1.2.3 Barangaroo Project Approvals

As well as the Barangaroo Concept Plan approval, there have been seven project applications approved between November 2007 and March 2012, as well as a number of modification applications. These include approvals for commercial buildings C3, C4 and C5, the basement car park and remediation, Headland Park early and main works, and SISCO pilot trial. A summary of the approved applications is provided at **Appendix E**.

1.2.4 Barangaroo Planning Review and Government's Response

In May of 2011, the Government commissioned an independent review of the planning processes and planning outcomes at Barangaroo. The review was undertaken by Meredith Sussex and Shelley Penn and was finalised in August 2011. Of relevance to this application, the review made recommendations in relation to affordable housing and design excellence.

The review acknowledged that only 2.3% of the proposed housing stock is classified as 'affordable', that housing for key workers is a priority, and consequently that the Baranagroo Delivery Authority should be asked to examine opportunities for doubling the amount of affordable housing on the site. In relation to design excellence, the review promoted the need for independent design excellence advice.

In November 2011, the Barangaroo Delivery Authority provided the Premier with a response to the recommendations of the Shelley Penn Review. Two notable recommendations were made, including the establishment of a design review panel for significant planning applications under

State planning provisions and investigation of the potential to deliver increased housing for key workers. The Premier adopted the recommendations in January 2012.

The department notes that while there are currently no requirements under the "State planning provisions" to establish design review panels, there is a requirement under both the MD SEPP and Barangaroo Concept Plan approval for a design review panel to be established if a design competition is held. This applies to buildings over 55m in height or developments with a site area over 1,500m². A design competition was not held for residential buildings R8 and R9, and this matter is further discussed in **section 5.1**.

The proponent has advised that affordable housing for key workers will be provided for at Barangaroo South, however, no such provision has been made for residential buildings R8 and R9. Consideration of this recommendation is therefore not applicable to the subject proposal, particularly as there is significant capacity for this to be provided as part of future residential building applications. This is discussed further in **section 5.12**.

2. PROPOSED PROJECT

2.1 Project Description (Original EA)

The project application (as proposed in the EA) sought approval for the construction and use of two residential buildings, R8 and R9, which are proposed to be sited within the area referred to as Block X.

In general terms, residential building R8 is a 9-11 storey building (up to RL 41.5m) comprising retail floor space at ground floor level (860m²) and 82 apartments above (8,920m²). Residential Building R9 is a 7-9 storey building (up to RL 36m) comprising retail floor space at the ground floor level (907m²) and 77 residential apartments above (7,539m²). The breakdown of the number of apartments and dwelling mix is provided in **Table 1** below.

Table 1: Residential apartments and dwelling mix

	Dwelling mix	Total
Residential building R8	<ul style="list-style-type: none"> 23 x 1-bedroom 47 x 2-bedroom 12 x 3-bedroom 	82 apartments
Residential building R9	<ul style="list-style-type: none"> 24 x 1-bedroom 53 x 2-bedroom 	77 apartments
Total	<ul style="list-style-type: none"> 47 x 1-bedroom 100 x 2-bedroom 12 x 3-bedroom 	159 apartments

Both R8 and R9 are contemporary buildings of a high architectural standard differing dramatically in terms of their façade treatments, composition and materials. Notwithstanding this, they are both complementary and present a unified form which responds to the public realm fronting the foreshore promenade and Globe Street.

The footprint of the buildings runs north-south and as a result they will have western views towards Darling Harbour. R8 and R9 are in the foreground of commercial buildings C4 and C5 (currently under construction) respectively, on the western side of Globe Street. The buildings are sufficiently separated so that they seamlessly integrate with City Walk (to the north), and Union Walk (the thoroughfare which separates the two residential buildings) to the south. The general layout and siting of R8 and R9 is illustrated in **Figure 3** below, with elevations shown in **Figures 5-7**.

In addition to the construction of the two residential buildings, the proposal includes the following:

- The allocation of 172 car parking spaces (168 residential and 4 retail) within level B2 of the approved basement car park (MP10_0023) for the exclusive use of residential buildings R8 and R9 (**Figure 4**);

2.2 Project Amendments

The proponent lodged the PPR on the 15 May 2013. A summary of the changes is outlined below and a breakdown of GFA and apartment mix now proposed (in the PPR) is provided at **Table 2** below.

Residential Building R8

- Reduction in retail GFA from 860m² to 807m²;
- Reduction in residential GFA from 8,920m² to 8,862m²;
- Adjustments to the ground floor, lobby and retail layouts;
- Changes to the internal layout of the apartments; and
- Alteration and refinement of the rooftop to incorporate the car park's exhaust riser and additional solar panels.

Residential Building R9

- Reduction in retail GFA from 907m² to 815m²;
- Increase in residential GFA from 7,539m² to 7,595m²;
- On level 8, some type 4 apartments' roof terraces have been enclosed allowing for the conversion of 5 x 2-bedroom units to 5 x 3-bedroom units;
- Increase in the allocation of car parking spaces in the basement car park from 172 to 176 (to reflect the change in 2-bedroom units to 3-bedroom units);
- Changes to the internal layout of the apartments;
- Provision of a curved south-western balcony;
- Modifications to western and eastern facades, including adjustments to windows, timber cladding, extension of channels;
- Alterations to the rooftop, including extending southern lift core to the communal roof, rearrangement of open space to accommodate plant room requirements, extending the roof with PVC cells; and
- Roof refined to include new enclosed space and to screen cores and exhausts.

Public domain

- Although the proponent's response to submissions states that there are changes from temporary public domain works to permanent public domain works, the proponent subsequently advised on 19 June 2013, that the permanent public domain works will now be the subject of a future application.

Table 2: GFA, residential apartments, dwelling mix and car parking (PPR)

	GFA and Dwelling mix	Total
Residential building R8	<ul style="list-style-type: none"> • 23 x 1-bedroom • 47 x 2-bedroom • 12 x 3-bedroom • 807sqm of retail GFA • 8,862sqm of residential GFA • 92 car parking spaces (residential) + 2 retail 	82 apartments 94 car parking spaces
Residential building R9	<ul style="list-style-type: none"> • 24 x 1-bedroom • 48 x 2-bedroom • 5 x 3-bedroom • 815sqm of retail GFA • 7,595sqm of residential GFA • 80 car parking spaces (residential) + 2 retail 	77 apartments 82 car parking spaces
Total	<ul style="list-style-type: none"> • 47 x 1-bedroom • 95 x 2-bedroom • 17 x 3-bedroom • 1,622m² of retail GFA • 16,457m² of residential GFA 	159 apartments 176 car parking spaces 18,049m ² of GFA



Exhibited Project



Preferred Project

Figure 5: Residential building R8 looking north-east (EA top) and (PPR bottom)



Exhibited Project



Preferred Project

Figure 6: Residential building R9 looking north (EA top) and (PPR bottom)



Exhibited Project



Preferred Project

Figure 7: Residential building R9 looking south-east (EA top) and (PPR bottom)

2.3 Project Need and Justification

NSW 2021

NSW 2021, the State's Plan, seeks to deliver attractive and sustainable development through increasing the supply of housing in existing urban areas with access to centres, services and transport. The proposal supports the objectives of NSW 2021, through provision of additional housing which takes advantage of its location close to public transport and services.

Draft Metropolitan Plan for Sydney to 2031

The Draft Metropolitan Plan for Sydney to 2031 was released in March 2013. It is a strategic document that guides the development of Sydney metropolitan areas to 2031. In terms of the Central Subregion, the plan seeks to create an additional 138,000 dwellings and 230,000 jobs by 2031. The redevelopment of Barangaroo, including the subject proposal will assist in achieving these aims.

Draft Sydney City Subregional Strategy

The proposal is consistent with the Draft Sydney City Subregional Strategy as it will create additional dwellings and jobs and encourage the development of lifestyle and entertainment activities.

3. STATUTORY CONTEXT

3.1 Major Project

Part 3A of the *Environmental Planning and Assessment Act 1979* (the Act), as in force immediately before its repeal on 1 October 2011, and as modified by Schedule 6A to the Act, continues to apply to transitional Part 3A projects. Director-General's environmental assessment requirements (DGRs) were issued in respect of the project (MP11_0002) prior to 1 October 2011, therefore the project is a transitional Part 3A project.

Consequently, this report has been prepared in accordance with the requirements of Part 3A and associated regulations, and the Minister (or his delegate) may approve or disapprove of the carrying out of the project under section 75J of the EP&A Act.

It is noted that this development will be the final transitional Part 3A application at Barangaroo. All of the remaining buildings and works will be carried out as either State significant development or local development under Part 4 of the Act.

3.2 Delegated Authority

The Minister delegated his powers and functions to determine project applications under section 75J of the Act to the Executive Director, Development Assessment Systems and Approvals where:

- The relevant council has not made an objection;
- A political disclosure statement has not been made; and
- There are less than 25 submissions in the nature of objections commenting on the proposal.

The relevant council did not make an objection, no political disclosure statement was made, and fewer than 25 submissions of objection were received (one only) on the subject application. Consequently, the project application can be determined under delegation by the Executive Director, Development Assessment Systems and Approvals.

3.3 Permissibility

The Barangaroo site is listed as a State Significant Site under Part 12 of Schedule 3 of the MD SEPP. The SEPP zones the project application site 'B4 Mixed Use' and RE1 Recreation. The construction and use of residential buildings (with retail) is permissible within this zone, subject to approval. However, the balconies of residential building R8 do protrude to a minor extent into the

RE1 zone by up to 2.8m which prohibits residential uses. Clause 23 of Part 12 of Schedule 3 of the MD SEPP overcomes this prohibition and this is discussed in detail in **section 5.1**.

3.4 Environmental Planning Instruments

Under sections 75(2)(d) and 75(2)(e) of the EP&A Act, the Director-General's report for a project is required to include a copy of, or reference to, the provisions of any State Environmental Planning Policy (SEPP) that substantially governs the carrying out of the project, and the provisions of any environmental planning instruments (EPI) that would (except for the application of Part 3A) substantially govern the carrying out of the project, and that have been taken into consideration in the assessment of the project.

The following EPIs are applicable to the assessment of the application:

- State Environmental Planning Policy (Major Development) 2005;
- State Environmental Planning Policy No.65 (Design Quality of Residential Flat Development);
- State Environmental Planning Policy (Infrastructure) 2007;
- State Environmental Planning Policy (Building Sustainability Index; BASIX) 2004;
- State Environmental Planning Policy No.55 (Remediation of Land); and
- Sydney Regional Environmental Plan (Sydney Harbour Catchment 2005).

The department's assessment of compliance with the MD SEPP, SEPP 55 and SEPP BASIX is provided in section 5 of this report. An assessment of compliance with the remaining EPIs is provided at **Appendix D**. In summary, the department is satisfied that the application complies with the relevant provisions of the above EPIs.

3.5 Objects of the EP&A Act

Decisions made under the EP&A Act must have regard to the objects of the Act, as set out in Section 5 of the Act. The relevant objects are:

- (a) *to encourage:*
- (i) *the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,*
 - (ii) *the promotion and co-ordination of the orderly and economic use and development of land,*
 - (iii) *the protection, provision and co-ordination of communication and utility services,*
 - (iv) *the provision of land for public purposes,*
 - (v) *the provision and co-ordination of community services and facilities, and*
 - (vi) *the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and*
 - (vii) *ecologically sustainable development, and*
 - (viii) *the provision and maintenance of affordable housing, and*
- (a) *to promote the sharing of the responsibility for environmental planning between the different levels of government in the State, and*
- (b) *to provide increased opportunity for public involvement and participation in environmental planning and assessment.*

The proposal complies with the objectives of the Act as it will facilitate the orderly development of the site. The residential buildings will provide social and economic benefits through the provision of additional housing opportunities and short-term and ongoing employment opportunities. The proposal does not raise any issues with regards to the objects under the Act.

3.5 Ecologically Sustainable Development

The EP&A Act adopts the definition of ecologically sustainable development (ESD) found in the *Protection of the Environment Administration Act 1991*. Section 6(2) of that Act states that ESD

requires the effective integration of economic and environmental considerations in decision-making processes and that ESD can be achieved through the implementation of:

- (a) *the precautionary principle*
- (b) *inter-generational equity*
- (c) *conservation of biological diversity and ecological integrity*
- (d) *improved valuation, pricing and incentive mechanisms.*

The department has considered the proposed development in relation to ESD principles and has made the following conclusions:

Precautionary Principle: The EA and PPR identified and assessed the environmental impacts associated with the project. Furthermore, the proponent's Statement of Commitments and recommended conditions of approval will manage any potential residual environmental impacts associated with the construction of the project.

Inter-Generational Equity: The project will provide high density housing within close proximity to transport and infrastructure.

Biodiversity: The project will not disturb any significant flora or fauna.

Valuation Principle: The cost of infrastructure and measures to ensure an appropriate level of environmental performance have been incorporated into the cost of the development.

The proponent has addressed the ESD principles as they relate to the project and the DGRs. The proposed buildings will incorporate such principles into the design, construction and ongoing operational phases of the development. The department has fully considered the objects of the Act, including the encouragement of ESD in its assessment of the application. On the basis of this assessment, the department is satisfied that the proposal encourages ESD, in accordance with the objects of the Act.

3.6 Statement of Compliance

The department is satisfied that the Director-General's environmental assessment requirements have been complied with.

4. CONSULTATION AND SUBMISSIONS

4.1 Exhibition

Under section 75H(3) of the EP&A Act, the Director-General is required to make the environmental assessment (EA) of an application publicly available for at least 30 days. After accepting the EA, the department publicly exhibited it from 21 November 2012 until 21 December 2012 on its website, and at the department's Information Centre and City of Sydney Council's One Stop Shop. In addition, the department also advertised the public exhibition in the Sydney Morning Herald and the Daily Telegraph and notified relevant landholders, and State and local government authorities in writing.

The department received five submissions from public agencies, including City of Sydney Council. One public submission of objection was received.

4.2 Public Authority Submissions

A summary of the submissions is provided below:

City of Sydney Council (Council)

City of Sydney Council did not object to the application but raised some general matters for consideration. These are summarised below:

- Submission does not address housing affordability;
- A condition should be imposed requiring compliance with the reflectivity report;

- No detail about public art;
- The temporary public domain works could be permanent and there is no details about future ownership;
- Documentation should relate to the NSW Government's Long Term Transport Master Plan;
- Truck holding areas should be identified;
- The proponent should note that Shelley Street will allow eastbound access only during construction; and
- The proponent should confirm the proposed timing for the construction of traffic signals at Napoleon Street/Hickson Road.

Sydney Water

Raised no objection to the application, however it advised that water and waste water servicing for R8 and R9 should be consistent with the Site Servicing Strategy for Barangaroo South, which is yet to be approved.

Further to the above, Sydney Water advised that the detailed assessment of the proposal will be undertaken when an application is made for the Section 73 Certificate including if amplification or changes to the system are required. Any adjustments to the Sydney Water Infrastructure as a result of the development will need to be funded by the developer.

Transport for NSW (TfNSW)

TfNSW did not object to the application, however it raised the following issues:

- Details on how the building design will interface with the adjacent public domain and specifically, the ferry wharves and pedestrian links have not been provided. TfNSW has requested that further details on the finishes levels and relationship between the proposed buildings and the public domain be provided.
- The Construction Traffic Impact Assessment needs to consider the cumulative impacts of all construction activities on local streets/haulage routes and intersections including the construction of Wynyard Walk, Barangaroo Central and other concurrent works and should incorporate combined construction programs;
- The measures to mitigate wind impacts to Globe Street need to be provided with respect to building design and public domain;
- Details regarding cycling access and movement into and around the site need to be provided. The status of the Barangaroo South Cycling Strategy should be confirmed including who is responsible for its preparation and implementation;
- The pedestrian access routes detailed in the application are incorrect including the location of the City walk bridge. These should be corrected to show the City Walk Bridge landing in City Walk and indicating this as a significant access route. This also needs to provide capacity for cyclists. This is required to meet the Director-General's requirements of "pedestrian and cycle access/circulation to meet the likely future demand within the precinct and connections to the external networks; particularly the City of Sydney Cycle Network;
- Figure 3 of the Transport Management and Accessibility Plan (TMAP) should be amended to show the correct entry points into Barangaroo.

TfNSW also advised that its review of the engineering reports and supporting information to enable the protection of the Metro corridor is not yet complete and therefore its review of the proposal has not included consideration of the requirements of the Metro corridor. TfNSW has advised of a willingness to continue to work with the proponent to ensure appropriate measures are in place to ensure its protection.

The department notes the above matters have been addressed in the PPR.

NSW Trade and Investment

NSW Trade and Investment (NSW T&I) has advised that it has no objection to the proposal. NSW T&I made some general comments about public transport, construction traffic, technical working groups, consultation, and linkages with Walsh Bay. The majority of the comments were

about Barangaroo in general and were not specifically related to the subject proposal. The proponent's Statement of Commitments and recommended conditions will address matters raised in respect to the various management plans and hours of work.

NSW Environment Protection Authority (EPA)

The EPA raised no concerns with the proposal and stated that environmental impacts associated with the works can be adequately managed via the Statement of Commitments, relevant project approval conditions and management plans. General comments are outlined below:

- Suitable measures should be adopted to ensure cumulative noise is carefully managed. The Noise and Vibration Sub-Plan (NVSP) should be revised to address the additional activities associated with the works.
- Construction waste classification, transportation and management should be conducted generally in accordance with the EPA's brochure titled: *"Know your responsibilities: managing waste from construction sites"* as well as the relevant waste Management conditions attached to Environmental Protection Licence No. 13336. Generally, the EPA has advised that existing waste management arrangements will not be significantly impacted by the proposal.
- Some exceedences of the EPA's air quality criteria are predicted as a result of a number of construction activities occurring concurrently across the site. The existing monitoring and reactive air quality management plan (AQMP) for the site should be modified to incorporate the construction activities associated with the proposal to protect nearby sensitive receivers.
- All works should be undertaken in a manner that ensures the protection of the water quality objectives and environmental values for Sydney Harbour estuarine waters in accordance with the following guideline documents:
 - *NSW Water Quality Objectives; and*
 - *The Australian and New Zealand Guidelines for Fresh and Marine water Quality (2000).*
- No contaminated or treated site waters (surface, collected groundwater or contaminated construction waters) are permitted to enter Sydney Harbour unless in accordance with the conditions attached to Environmental Protection Licence No. 13336. The existing Water and Stormwater Management Plan should be updated to include any additional impacts arising from this proposal.

The department notes the above matters have been addressed in the PPR, and the EPA's recommended conditions have been incorporated into the Instrument of Approval.

4.3 Public Submissions

One public submission of objection was received with respect to the project application. The submission stated that no clear map of the development was provided and there was a failure by the proponent to address impacts on adjoining residents, including noise and visual impacts. The department considers that these issues have been adequately addressed in the EA, PPR and will be managed through management plans and recommended conditions.

4.4 Preferred Project Report

As previously outlined in section 2.2, the proponent provided a PPR on 15 May 2013, which included a response to submissions. Detailed changes to the buildings were not specifically made in response to issues raised in submissions, but were rather the result of further design development. The PPR was forwarded to public agencies for comment. The EPA and Sydney Water were satisfied with the level of information provided in the PPR. City of Sydney Council advised that it did not wish to make any further comments on the proposal. No other agency submissions were received.

5. ASSESSMENT

The department considers the key environmental issues for the project to be:

- Consistency with the MD SEPP and the Barangaroo Concept Plan;
- Built form and urban design;
- Residential amenity;
- Visual impacts, overshadowing;
- Traffic and transport;
- Contamination and remediation;
- Construction impacts;
- ESD;
- Housing affordability; and
- Public interest.

5.1 State Environmental Planning Policy (Major Development) 2005 (MD SEPP)

Part 12 of Schedule 3 of the MD SEPP specifies that development at Barangaroo must comply with:

- The relevant zone objectives;
- The gross floor area (GFA) and height of buildings maps; and
- The design excellence provisions

Table 3 below outlined the proposal's compliance against the above controls. Table 3 reveals that both buildings comply with the maximum height and GFA controls for Block X. Residential building R9 complies with the zoning controls as it is wholly located in the B4 mixed use zone and is therefore permissible. However, residential building R8's north-west balconies above ground level extend into the RE1 recreation zone, which prohibits residential uses. The extent of the balcony overhang varies, but level 4 is presented as the worst case, at it encroaches by approximately 2.8m (**Figure 8**).

Table 3: MD SEPP Controls

Control	Project Applications (as modified by the PPR)	Compliance
Zoning		
<u>Zone B4 Mixed Use</u>	Building R8 is mostly located in the zone	Yes
	Building R9 is wholly located in the zone	Yes
<u>Zone RE1 Recreation</u>	North-west balconies above ground level protrude into the zone between 800mm (level 1) to 2.8m (level 4) and up to 5m ² and 15m ² in area	No
	Building R9 is wholly located in the zone	Yes
Block X <u>Maximum Height</u> of RL 41.5	R8: 9-11 storey building attaining a maximum height of RL 41.50m, measured to the top of the building parapet.	Yes
	R9: 7-9 storey building attaining a maximum height of RL 36m, measured to the top of the photovoltaic cells.	Yes
FSR		
Block X <u>Maximum GFA</u> of 18,908m ²	The applications seek approval to create two residential buildings with a combined GFA of 18,079m ²	Yes

Note¹: The height of residential buildings R8 and R9 has been calculated in accordance with the definition of building height contained in the Standard Instrument, which requires the measurement of the vertical distance between ground level (existing) and the highest point of the building including plant and lift overruns.

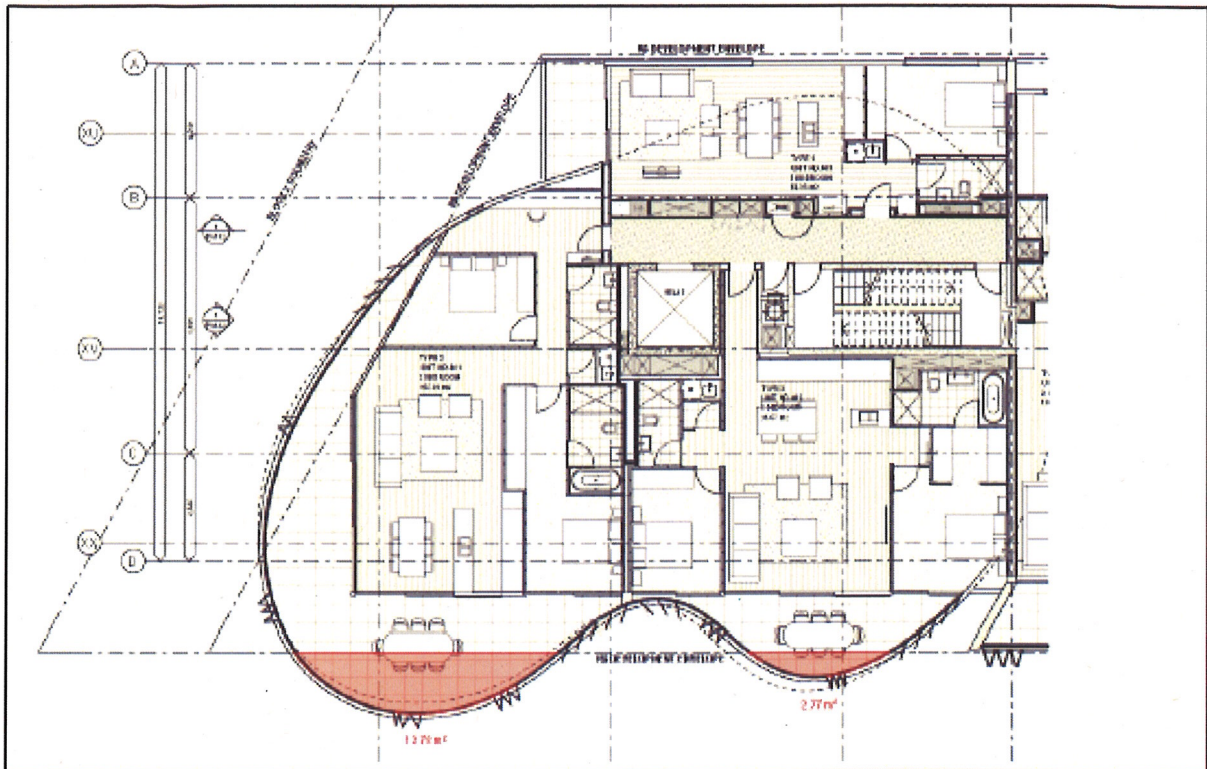


Figure 8: Balcony overhang (in red) on level 4 of residential building R8

The proponent has highlighted that clause 23 of the MD SEPP 'Development near zone boundaries' provides that a use on one side of a zone boundary, may be carried out in the adjoining zone if the development is consistent with both zones, and if it is compatible with the land uses for the adjoining land. The development near zone boundaries principle only applies to land within 25m of the zone boundary.

The proponent has advised that during the design development of the building, the BDA wanted the northern module of residential building R8 to have greater design expression and that the curved nature of the façade should be further emphasised, where the building's balconies were designed such that they extended in the zone. The proponent has advised that no part of the building's elevation extends into the RE1 zone and no living room extends over the Block X boundary. The area of overhang varies between 800mm on level 1 to 2.8m on level 4.

In considering the objectives of clause 23, the department is satisfied that the development is not inconsistent with the objectives for development in both zones and the carrying out of the development is desirable due to compatible land uses for the following reasons:

- The land under which the balconies lie can still be used for recreational purposes consistent with the RE1 zone objectives;
- The balconies do not extend past the awnings at ground level and do not dominate the use of land for recreational and public open space purposes; and
- The waterfront promenade will not be impacted on.

It is noted that future applications will be required to be lodged to subdivide the site such that R8 and R9 will sit on a separate lot from the public open space land. At this stage, easements for balcony encroachments into the open space lots will need to be identified.

Design Excellence

Clause 19(1) of Part 12 of Schedule 3 of the MD SEPP requires the consent authority to consider whether a new development will exhibit design excellence. When determining whether an application exhibits design excellence, the consent authority must have regard to:

- Whether a high standard of architectural design, materials and detailing appropriate to the building type and location will be provided;
- Whether the form and external appearance of the building will improve the quality and amenity of the public domain;
- Whether the building will meet sustainable design principles in terms of sunlight, natural ventilation, wind, reflectivity, visual and acoustic privacy, safety and security, and resource, energy and water efficiency; and
- If a design competition is required to be held, the results of the competition.

Clause 19(3) requires proponents to undertake an architectural design competition if a building is higher than RL 57, or the area of the site on which the building is to be erected is in excess of 1,500m², unless the Director-General certifies in writing that the development exhibits design excellence.

In this instance, as the site area of the buildings will be greater than 1,500m², a design competition is required to be held. A similar requirement is also found in the Barangaroo Concept Plan approval (clause C2(7)(b)(ii)).

For this application, the proponent has relied on the provisions of clause 19(4) of the MD SEPP and clause C2(7) of the Barangaroo Concept Plan, which stipulate that the requirement to undertake a design competition does not apply if the Director-General:

- Certifies in writing that an architectural design competition is not required because of the excellence of the proposed building design; and
- Is satisfied that:
 - the architect responsible for the proposed design has an outstanding reputation in architecture, and
 - necessary arrangements have been made to ensure that the proposed design is carried through to the completion of the development.

The Director-General engaged the NSW Government Architect to review the proposed design of the two residential buildings. The NSW Government Architect's report was provided to the department on 17 January 2013. It concluded resoundingly that the urban design and built form of the development achieves design excellence and a high standard of architectural design. The report also highlighted that FLMT Architects (designers of R8) and PTW Architects (designers of R9) have received significant recognition for their previous work and have a depth of experience in residential projects.

The key findings outlined in the NSW Government Architect's report are summarised as follows:

- The architectural expressions of the buildings are appropriate for a waterfront location, respond well to the site context and will positively enhance the built environment at Barangaroo South;
- The scale of the buildings are appropriate as a 'back-drop' to the public activity and waterfront promenade;
- The buildings are critical to mediate the scale of the commercial towers behind and the human scale of the waterfront location;
- No adverse visual impacts are expected, confirming the scale and bulk of the buildings are appropriate as a continuum of existing waterfront promenade developments;
- Materials and finishes are appropriate and enrich the buildings;
- There are limited shadowing effects negated by the commercial buildings C3, C4 and C5 to the east; and
- The public domain will not be affected by wind and the nature of the buildings will act to diffuse wind effects.

The department has considered the design of the buildings, and agrees with the findings of the NSW Government Architect that the buildings exhibit design excellence. The proposed buildings have been designed by FLMT Architects and PTW Architects, which have significant international

reputations in the field of architecture. The proponent has confirmed that it will retain the architects over the life of the projects.

The Director-General subsequently formed the view that the buildings exhibit design excellence, and waived the requirement for the proponent to undertake a design competition on 20 June 2013.

5.2 Barangaroo Concept Plan

The Barangaroo Concept Plan (as modified) also includes height and GFA controls for each development block. These controls are consistent with the MD SEPP provisions outlined above, however the Concept Plan differs from the provisions of the MD SEPP in that it specifies floor space maxima for each development block. **Table 4** below demonstrates that the applications are consistent with the controls outlined in the Concept Plan (as modified).

Table 4: Concept Plan Controls (MOD 4)

Block X Control	R8 and R9 (as modified by the PPR)	Compliance
Height¹:		
RL 41.5	The application seeks approval to construct two residential buildings with a maximum height of RL41.5m (R8) and RL36 (R9).	Yes
GFA		
18,908m ² permitted within Block X	The application seeks approval to allocate 18,079m ² of GFA. Taking into consideration the floor space allocated to R8 and R9, 829m ² of GFA would remain available for allocation within Block X.	Yes
16,463m ² max permitted for residential uses within Block X	The application seeks approval to allocate 16,457m ² (8,862m ² for R8 + 7,595 m ² for R9) of GFA. Taking into consideration the floor space allocated to R8 and R9, a maximum of 6m ² of GFA would remain available for allocation within Block X for residential uses. Consequently, the proponent has advised that R1 (the remaining building located within Block X) will now be commercial in its use, of which 829m ² of GFA is able to be used.	Yes

Note¹: The heights of R8 and R9 have been calculated in accordance with the definition of building height contained in the Standard Instrument, which requires the measurement of the vertical distance between ground level (existing) and the highest point of the building including plant and lift overruns. The department notes that the height of the buildings to the top of the architectural roof features is RL 41.5 and RL 36 respectively.

In addition to the above, Modification B5 of the Concept Plan approval (as modified) requires applications to demonstrate consistency with the Built Form Principles and Urban Design Controls (Urban Design Controls) prepared by RSHP. An assessment of compliance with the Urban Design Controls is provided in Section 5.3 below.

5.3 Built Form and Urban Design

As previously outlined, Modification B5 of the Concept Plan approval requires applications to demonstrate compliance with the Urban Design Controls. These controls are similar to a development control plan in that they have been created to guide the future development of Barangaroo South and are intended to be used as a tool to achieve design excellence, as required under the MD SEPP, and Modification C2 of the Concept Plan.

In this regard, the Urban Design Controls have been broken into two parts: a set of eight overarching built form principles, and 11 urban design controls. The built form principles set out the vision for:

- The western boundary of the site;
- The design of the Hickson Road boulevard;
- The definition of street edges;

- The provision of new north-south pedestrian links;
- Tapering of the built form;
- The provision of open space within the development blocks;
- View sharing; and
- The orientation of buildings.

The urban design controls supplement the built form principles by providing a set of performance based controls for each development block that regulate: building mass and location; street wall establishment; building articulation; building legibility; ground floor permeability and accessibility; roof top design; façade design; signage; public access along the wharf; and sustainable building design. Each control has a series of objectives which outline what the relevant control is seeking to achieve. In addition, the standards provide a conceptual example of how each objective may be complied with. The Urban Design Controls specify that if an application seeks to vary a control or standard, the variation will need to be justified in the project application documentation.

An assessment of compliance with the Urban Design Controls is provided below.

5.3.1 Building Massing and Location

The Urban Design Controls for Block X aim to:

- Ensure the building mass for R8 and R9 is appropriate within the envelope; and
- Ensure the predominant height fronting the foreshore promenade be 6 or 7-storeys above ground level, with over 70% of the building frontages having a consistent height. Any "pop ups" shall not result in more than 9-storeys above ground level and the overall massing shall be such to create an homogenous yet interesting streetwall.

In order to achieve these objectives, the design standards specify that:

- Above ground floor level, the westerly orientated facades should have a minimum 3m setback;
- Open and enclosed balconies are allowed to protrude into the setback zones;
- The building mass height should be between maximum and minimum heights of RL 41.5 and RL 25 respectively; and
- On the easterly orientated facades a minimum of 1m setback is required.

The department considers that the application generally complies with two of the design standard controls for the following reasons:

- The west orientated open balconies within R8 and R9 protrude into the setback zones; and
- The proposed building height for R8 is RL41.5 and RL36 for R9.

The department notes a minor non-compliance with the minimum 3m setback requirement for above ground level western facades. The western facade of R8 is setback between 2m and 2.3m and R9 is generally setback between 2.7m and 3m. The proponent's justification for the non-compliance is based on the orientation of Block X, making it difficult to achieve two hours of solar access to the living rooms of apartments on the 21 June. Therefore, by reducing the setback to the west, it would increase the opportunity for solar penetration into the living areas of the apartments. The department has assessed the non-compliance on its merits and considers it would not have a significant visual impact on the building mass of R8 and R9. The building mass is appropriate within the envelope and the balconies sufficiently obscure the view of the apartments from the public domain, thereby maintaining privacy. Furthermore, the setback variation would allow the benefit of improved solar access into the apartments.

The application also does not achieve a minimum of 1m setback consistently on the easterly orientated facades as depicted in **Figures 9 and 10**. The non-compliance generally relates from level 1 to level 7 of R8, where the setback varies between 0m and 1m from the development envelope. The setbacks for R9 vary between 0m and 1.1m from ground level to level 7. The department has assessed the non-compliance on its merits and considers that protrusion into the setback zone acceptable for the following reasons:

- It would not have adverse visual impacts as the depth to the facade creates two contrasting planes which add to the visual interest when viewed from the streetscape; and
- The varying setback between 0m and 1.1m on ground level within R9 would allow opportunity to provide seating along the retail glass line which will activate Globe Street.

Given the above, the department is satisfied that the application generally complies with the building massing and location objectives of the Urban Design Controls.

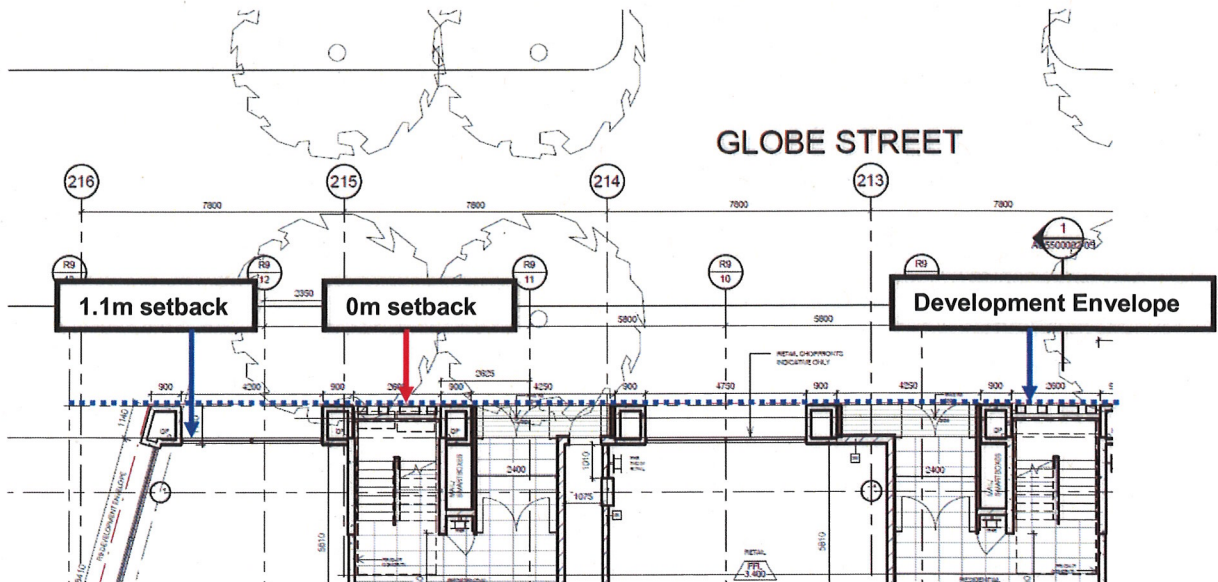


Figure 9: Ground Level Setback from R9 Development Envelope

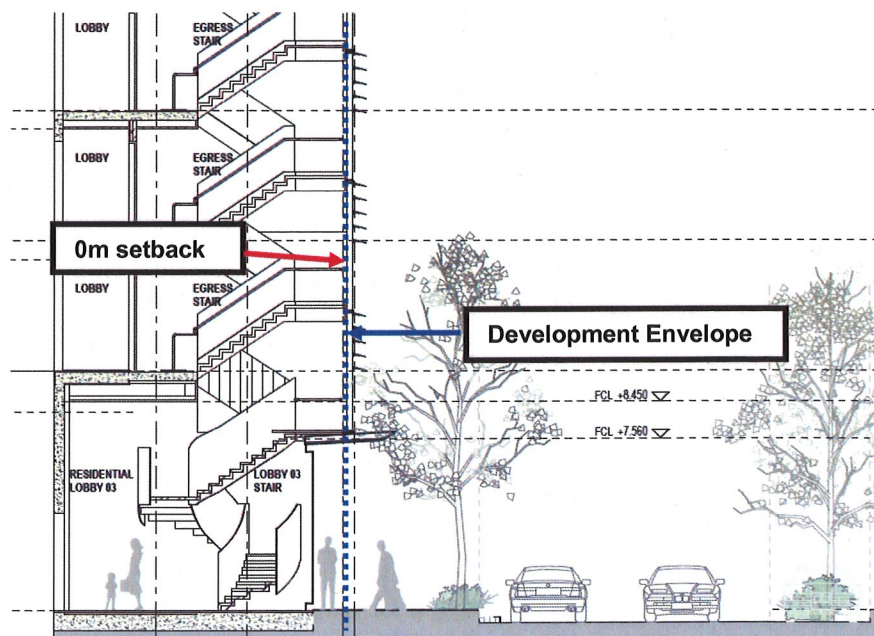


Figure 10: Setback from R8 Development Envelope

5.3.2 Building Articulation, Legibility and Façade Design

The Urban Design Controls seek to achieve the following objectives:

- To establish an articulated, well proportioned building mass;
- To ensure that constituent elements of the building are legible;
- To ensure that building elements and the structure at the base are legible;

- To ensure the architectural quality of the facades;
- To articulate the building's functions and massing with appropriate facade design and detailing;
- To ensure the facades contribute to the building's articulation and mass; and
- To contribute to the "carbon neutral" aims for Barangaroo South.

In order to ensure this occurs, the controls recommend compliance with the following standards:

- To reduce the impact of the buildings mass, the envelope and floor plates are to be horizontally and/or vertically articulated, in particular at upper levels;
- The building form is to express sustainability features such as for example access to natural light, ventilation and solar shading;
- The separate primary components of the building will be expressed and include additional elements such as the open and enclosed balconies;
- Building form is to be reinforced using modulation of open and enclosed balconies, and building elements to avoid monotony;
- Appropriate materials for longevity, durability and flexibility;
- Environmentally sustainable design is to be incorporated on all facades;
- The depth and layering of facades is to be achieved through relief and protrusions, and mirrored facades should be avoided; and
- The facade components such as external shading shall be used to provided light and shade to the building.

The department has assessed the application against the objectives and standards and has concluded that:

- Residential buildings R8 and R9 are appropriately designed and incorporate horizontal and vertical articulation in the form of punctuated planter boxes, sun shading devices, private balconies and expressed staircases to reduce the perceived bulk and scale of the buildings (see **Figures 11 and 12**);
- The buildings express sustainability features by implementing climate control devices including adjustable bifold screens, louvers, photovoltaic panels, naturally ventilated apartments and staircases;
- The buildings are designed with low operational energy consumption, high thermal storage capacity through the use of concrete and aim to reduce the embodied carbon and energy;
- The selection of precast concrete, timber, perforated metal and glass enrich the facade and create a layering effect adding to the flexibility of external shading; and
- The building forms have been articulated creatively through a variation of facade setbacks, landscaping treatments, open communal space within R9, flexible shading devices, balconies and a continuous canopy of the western facade defining the public domain and creating a delineation between retail and the first level apartments

Given the above, the department is satisfied that residential buildings R8 and R9 achieve the objectives and design standards for building articulation, legibility and facade design set out in the Urban Design Controls.

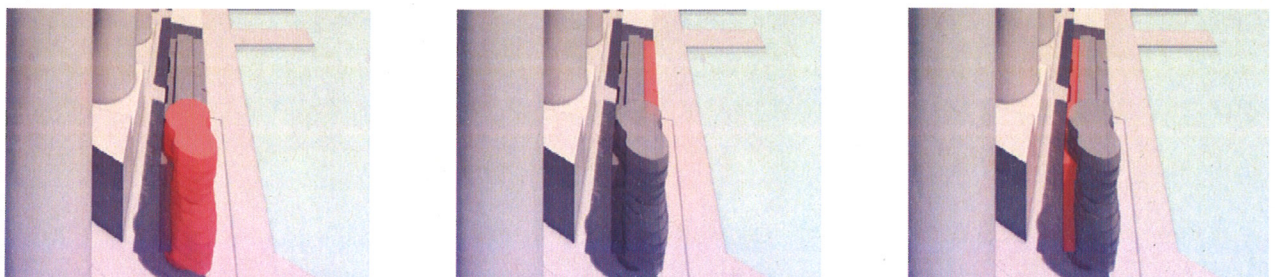


Figure 11: R8 Building Legibility Diagrams

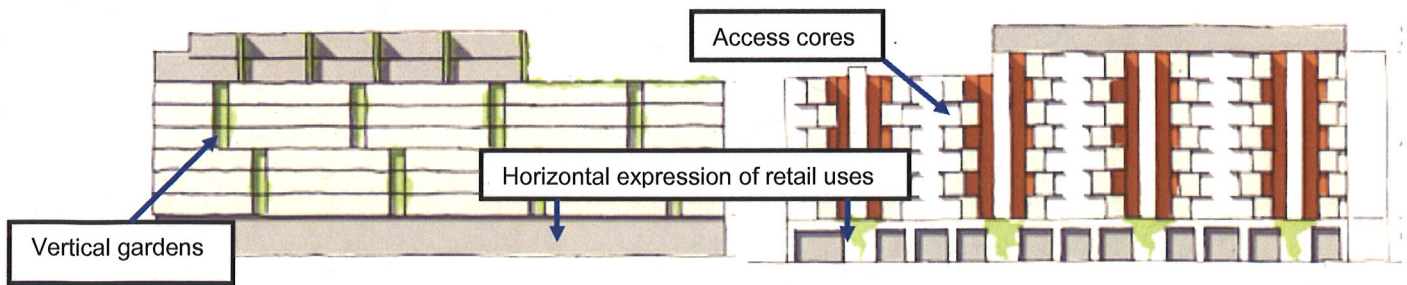


Figure 12: R9 Western Elevation (left) and R8 Eastern Elevation (right) depicting Building Legibility

5.3.3 Ground Floor Permeability and Accessibility of the Public Realm

The Urban Design Controls seek to ensure that a permeable pedestrian network is provided through Barangaroo South that correlates with pedestrian desire lines. In addition, the objective for Block X seeks to provide a permeable and accessible pedestrian network through Barangaroo South. Compliance with the objective and standards for ground floor permeability and accessibility are summarised in **Table 5**, and the requisite pedestrian connections are depicted in **Figure 13**.

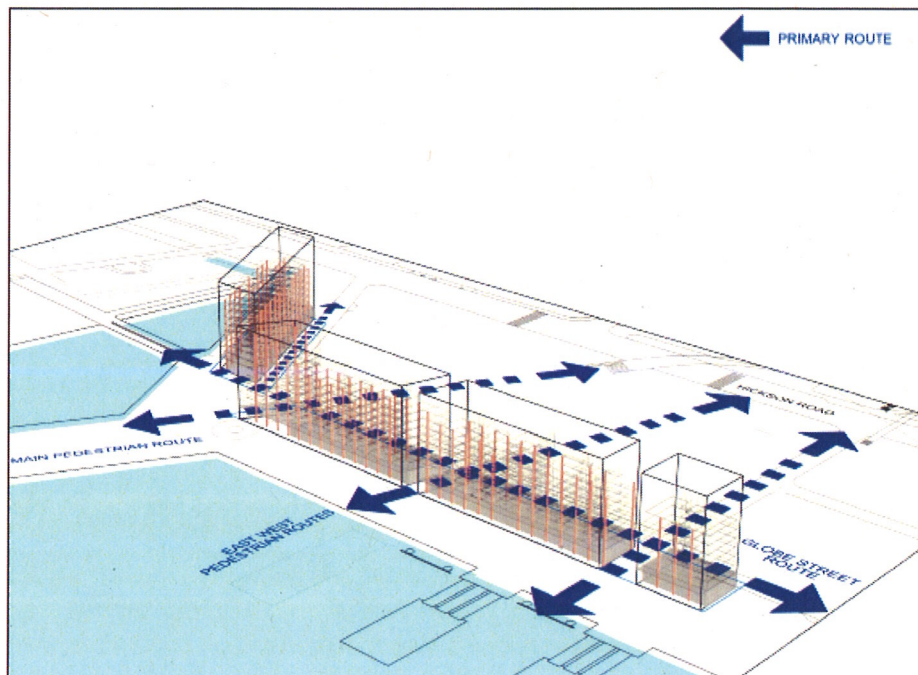


Figure 13: Urban Design Control depicting Primary Access through Block X

Table 5: Compliance with the Performance Standards for Ground Floor Permeability and Accessibility – Block X

Required	Proposed	Compliance
<ul style="list-style-type: none"> Public access around the block on all edges 	<ul style="list-style-type: none"> Public access around the building edges of R8 and R9 	<ul style="list-style-type: none"> Yes
<ul style="list-style-type: none"> One primary north-south connection 	<ul style="list-style-type: none"> Two north-south connections 	<ul style="list-style-type: none"> Yes
<ul style="list-style-type: none"> Four primary east-west connections 	<ul style="list-style-type: none"> Three east-west connections. 	<ul style="list-style-type: none"> No

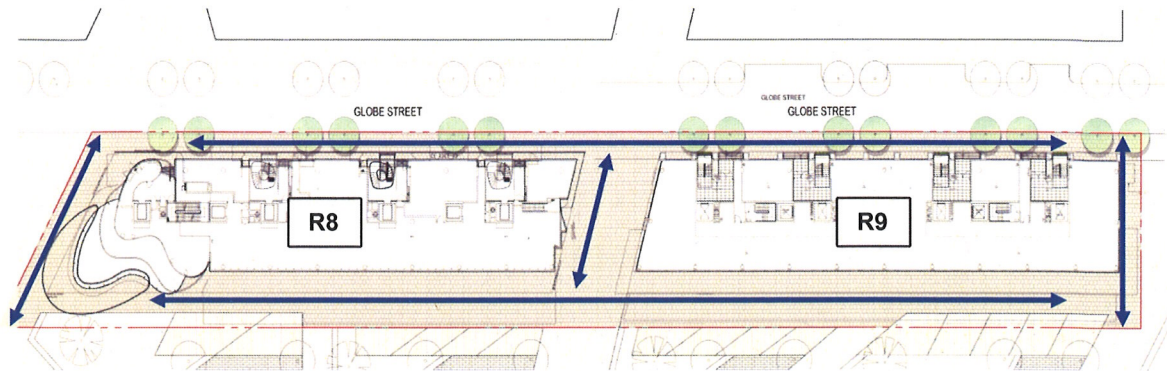


Figure 14: Proposed Primary Pedestrian Access Arrangements

The Ground Floor permeability and accessibility controls require four east-west connections through Block X. The application proposes three east-west connections and has stated the fourth connection is not located within the application site. The department notes a development application for the adjacent R1 site has the potential to create the fourth east-west connection through Block X. Accordingly, the department is satisfied with the access arrangements provided by the subject application.

5.3.4 Ensuring Quality of Rooftops

Principle 6 of the Urban Design Controls seeks to ensure the rooftop mass of R8 and R9 are articulated and legible. It ensures that the roof design integrates sustainable features. In addition, it seeks to ensure that the architectural treatment of the roof and its form are designed, coordinated and remain sympathetic to the adjacent context.

In order to ensure the objectives are achieved, the standards require:

- The roof forms to incorporate architectural treatment;
- Architectural treatment of exposed elements such as lift shafts, overruns control rooms and any sustainability features;
- Exposed mechanical equipment is to be avoided;
- The use of good quality materials; and
- The roof to incorporate no more than 60% accessible terraces.

The department has assessed the application against the controls and objectives and considers that:

- The roof form of R8 incorporates an architectural treatment by dividing it into separate modules which gives a separate identity to each apartment building and reduces the overall scale of the west facade along the water's edge;
- Operable roof louvers are featured along the western facade of R8 which will assist with solar access to the loft apartments on level 7;
- Solar panels are positioned in the middle of the R8 roof and would be only visible from the taller commercial buildings that overlook the roof line;
- The R9 communal rooftop (approximately 400m²) provides a mix of hard and soft landscaping treatments with private break-out spaces with amenities such as barbecues, bench seating and outdoor dining tables and chairs (see **Figure 15**);
- The R9 roof terraces feature photovoltaic panels which prevent cross viewing from the commercial towers C3, C4 and C5; and
- No mechanical equipment will be exposed on the R8 and R9 rooftops.

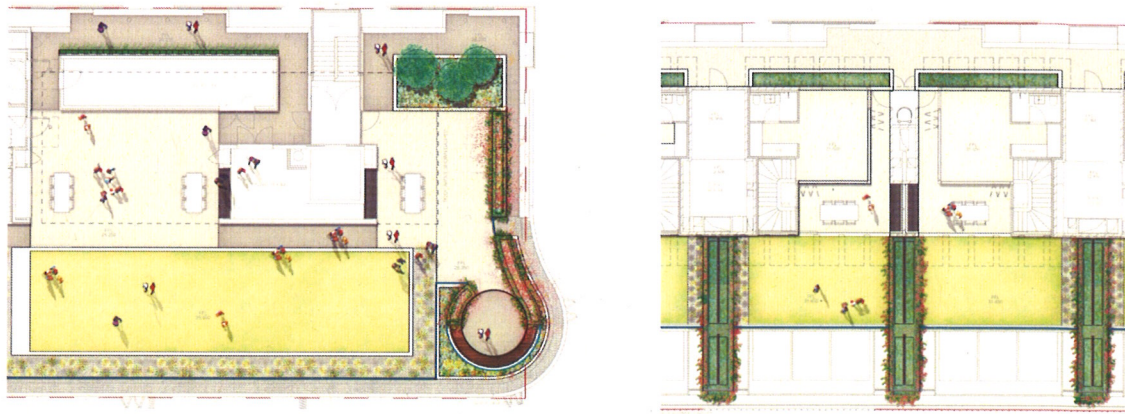


Figure 15: R9, Level 7 Communal Roof Top (left) and Level 8 Private Roof Terraces (right)

R9 will have accessible roof terraces that exceed 60% of the roof area. The department considers this non-compliance acceptable for the following reasons:

- The roof terrace enhances the residential amenity of the building, with uninterrupted harbour views;
- Privacy screens in the form of photovoltaic panels are provided in the communal area to prevent cross viewing from the commercial towers;
- The communal landscaped area (approximately 400m²) offers an opportunity to enhance the social integration of the residents;
- Private terraces to each apartment (approximately 60m²) are screened by greenwalls and photovoltaic panels above; and
- The proposed accessible roof terraces would not have adverse impacts on the surrounding context.

The department has assessed the application on its merits and is satisfied that the proposed rooftops will offer high quality design and amenity for the residents.

5.3.5 Street Wall Establishment, Active Streetfronts and Public Domain Works

The Urban Design controls seek to ensure active streetscapes and ensure ground floor retail uses are accessible and activate the waterfront. At least 70% of the ground floor should compromise of retail or entertainment uses fronting the pedestrian waterfront promenade. In addition, it ensures that the street wall defines the promenade and Globe Street.

The design standards applicable to Block X that help achieve the objectives of the control are listed below:

- Building entrances to internal areas such as residential lobbies, exit ways and service areas or loading docks shall be considered as part of the 70% active requirement;
- Building service areas, parking entrances and loading docks will not be located on the promenade with the majority of servicing occurring from the basement;
- The width of driveways shall be minimised; and
- The building mass at the podium is to form a continuous Street Wall around the site for a minimum of 85% of the site perimeter.

The department has assessed the application against the requirements of the above design standards and concludes that:

- The proposed retail and residential lobbies line approximately 90% of Globe Street and would provide activation and vitality to both buildings and the foreshore promenade (**Figure 16**);
- Active uses (cafes and retailing) are proposed to line approximately 98% of the key public domain frontages to the north and west identified in the Concept Plan;
- A continuous glass frontage for the retail space on ground level activates the western facade of R8;

- An operable retail facade providing openness to the foreshore promenade of R9 allows for a seamless connection of the public realm;
- Globe Street is activated by providing access to residential lobbies and retail premises of R8 and R9;
- No service areas are located on the promenade with the majority of services, parking and loading dock occurring from within the basement;
- No driveways are proposed; and
- The building mass of R8 and R9 would provide a continuous street wall around the site.

Given the above, the department considers the application is consistent with the Urban Design controls for street wall establishment and active streetfronts.

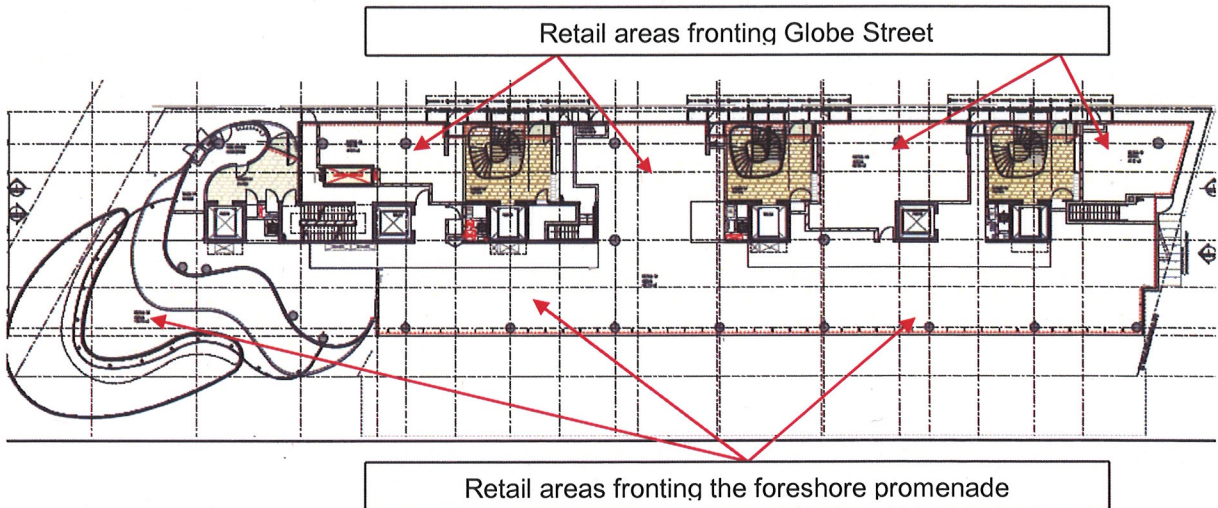


Figure 16: Ground floor retail areas for R8

Public Domain Works

The project application seeks approval to undertake temporary works within the public domain (**Figure 17**). The proposed works consist of the following:

- Pavements to all footpaths and pedestrian areas directly adjacent to R8 and R9;
- Street tree planting along Globe Street; and
- Paving to the foreshore promenade which also includes temporary lighting to provide public amenity, safety and comfort.

It is intended that the detailed final detailed design of the temporary public domain works (currently indicative) will be subject to further design development with key stakeholders, and will be submitted to the Director-General for approval (post determination).

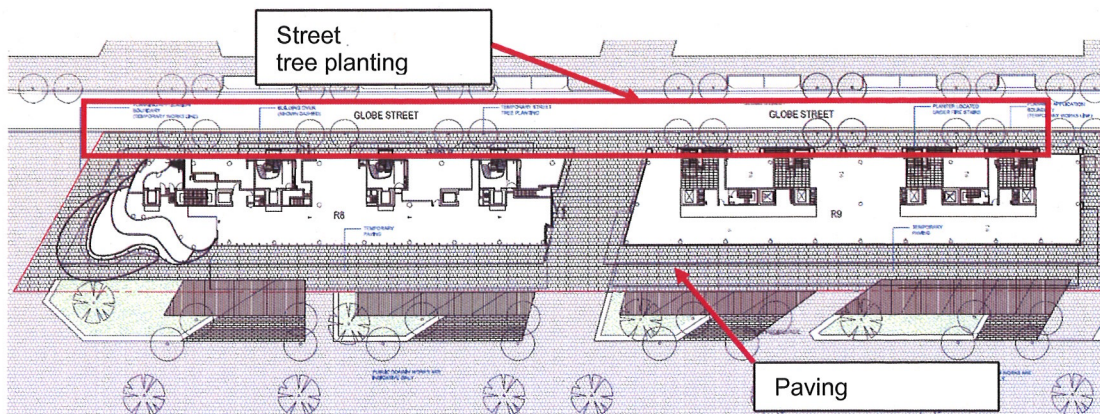


Figure 17: Indicative Public Domain Works (EA and PPR)

The department supports the proposed temporary public domain works concept in principle as it would enhance the adjacent public realm through the use of street and promenade trees and footpath paving. Final treatments of the temporary design features within the public domain will be determined by the Director-General in consultation with key stakeholders. Future permanent public domain works will be the subject of a separate application.

5.4 Residential Amenity

The amenity impacts of the development have been considered against the requirements of *State Environmental Planning Policy No.65 – Design Quality of Residential Flat Development* (SEPP 65) and the accompanying Residential Flat Design Code (RFDC).

The department's consideration of the buildings against the RFDC has revealed that the proposed buildings generally comply with the majority of the 'rules of thumb' in the RFDC, including building depth, pedestrian access, balconies, ceiling heights, internal circulation and storage. A detailed analysis of all RFDC requirements is contained in **Appendix D**.

The buildings do not strictly comply with the RFDC in relation to building separation and privacy, apartment layouts (kitchen) and daylight access. These matters are considered in detail below.

Building Separation and Privacy

The RFDC recommends that for buildings nine-storeys or above / over 25 metres, that there should be 24 metres between habitable rooms/balconies, 18 metres between habitable rooms/balconies and non-habitable rooms, and 12 metres between non-habitable rooms.

The proposed separation of residential buildings R8 and R9 is 12 metres between habitable rooms. The department has undertaken an assessment against the separation distances recommended in the RFDC and has concluded that a departure is justified as:

- Only 14 apartments in R8 (17%) and 7 apartments in R9 (9%) face one another and are affected by the 12 metre separation;
- The buildings have been designed with each other in mind and so the layout and orientation of the apartments (bedrooms, living rooms and balconies) aim to maximise privacy; and
- The apartments will have louvers and other forms of screening designed to minimise privacy issues.

Apartment Layout

The RFDC recommends that the rear wall of a kitchen should be no more than 8m from a window. The proposed kitchens in 30 of the apartments of residential building R8 (36%) and 42 apartments in residential building R9 (54%) exceed the 8m requirement. The department has undertaken an assessment against the rear wall of the kitchen being no more than 8 metres as recommended in the RFDC and has concluded that a departure is justified as:

- The majority of the kitchen areas are within 8 metres of a window;
- The rear walls of apartments which exceed the 8 metre requirement only do so by 1 metre (i.e. they're 9 metres away); and
- Satisfactory daylight and natural ventilation can be achieved through cross ventilation, full height windows, and the absence of walls or obstructions between the windows and the kitchen areas.

Daylight Access

The RFDC recommends that for dense urban areas at least 70% of apartments in a development should receive a minimum of two hours of direct sunlight to living rooms and private open space between 9am and 3pm in mid winter (21 June). While the proposed development will exceed the 70% target for private open space (91.8%), it will not achieve it for living areas, being 25.7%. The department has undertaken an assessment of the non-compliance with daylight access for living areas as recommended in the RFDC and has concluded that a departure is justified for the following reasons:

- Due to their west facing orientation, solar access into living rooms will be available after 3pm;
- If solar access into living rooms after 3pm was included, the development would achieve 96.2%;
- Although solar access could be improved by removing balconies along the buildings' western façade this would not provide a beneficial outcome as protection from the western sun contributes to residential amenity;
- The splayed balconies of residential building R8 and staggered façade of residential building R9 boost solar access;
- The internal layouts of the apartments are open plan and well-designed;
- Occupants will still have access to private open space areas which have good solar access; and
- The apartments will have prime harbour views and the location in the CBD could be considered more than a trade-off for non-optimal solar access amenity.

5.5 Visual Impacts and Overshadowing

Visual Impacts

The proponent engaged Virtual Ideas to prepare a view analysis and photomontages of the buildings and views were presented from key locations, including Hickson Road, Millers Point, Kent Street, Darling Harbour and East Balmain (**Figures 18-19**).

An analysis of the views and view impacts prepared by Virtual Ideas for the proposal was undertaken by the NSW Government Architect. The NSW Government Architect concluded that no adverse visual impact would result from residential buildings R8 and R9, which confirms that the scale and bulk of the development is appropriate.

While visual impacts associated with commercial buildings C3, C4 and C5 was a dominant issue in the department's assessment of these applications, visual impacts associated with residential buildings R8 and R9 are clearly far more benign, particularly given their significantly lesser scale, bulk and height.

An analysis of the views and view impacts of the proposal by the department confirms that residential buildings R8 and R9 will not affect views through the site from Millers Point and Hickson Road, and will have no impacts on views obtained from residential apartments on Kent Street. Views of residential buildings R8 and R9 will vary depending on the viewer location in Pyrmont, Balmain East and Blues Point. However, given the visual dominance of commercial buildings C3, C4 and C5, residential buildings R8 and R9 will appear as more of a recessive built element, moderating between the changes in scale between the foreshore and commercial buildings.

Given the above conclusions, the department is satisfied that the application will not give rise to any unreasonable visual impacts within the public domain or at private residences.

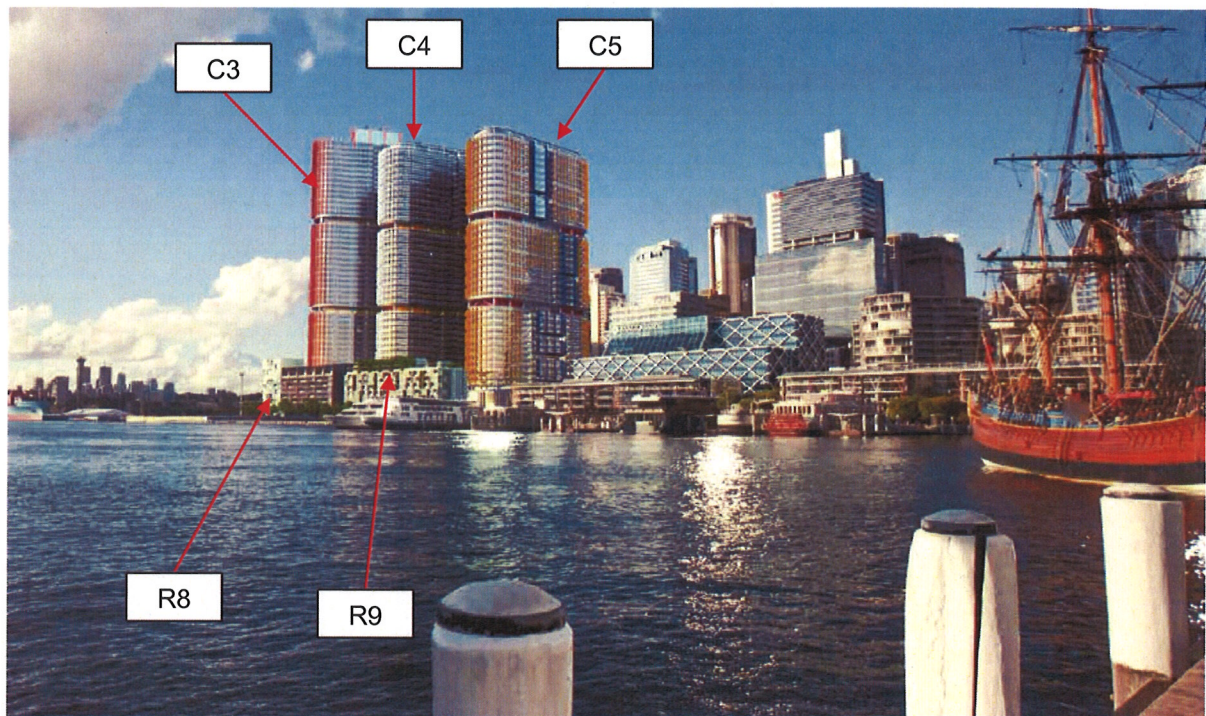


Figure 18: View looking north-east from Darling Harbour

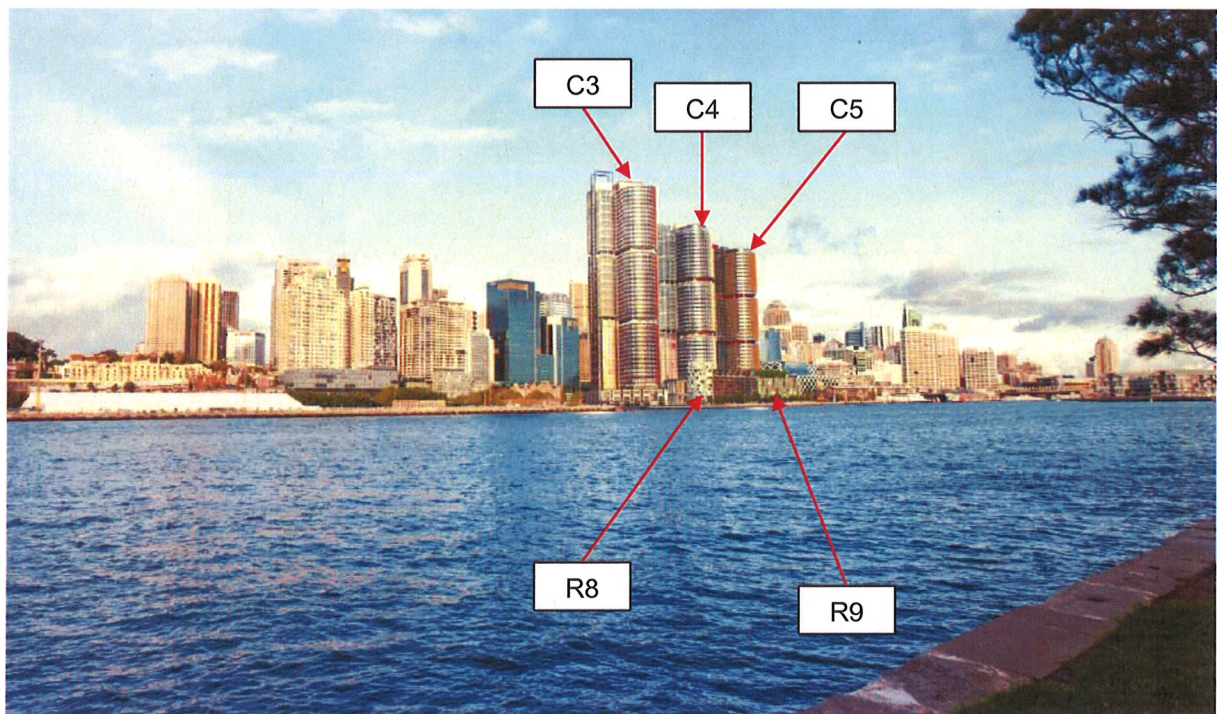


Figure 19: View looking south-east from Balmain East

Overshadowing

Shadow analysis diagrams were provided in the EA to depict the extent of overshadowing as a result of the construction of residential buildings R8 and R9. These diagrams have been prepared in accordance with the methodology approved under the Concept Plan. An analysis of the overshadowing impacts of the projects at winter solstice (21 June) is provided below.

21 June – 9am

The shadow analysis indicates that at 9am some shadowing on a small part of Darling Harbour would result but it is almost entirely subsumed by the shadow of the three approved commercial buildings (see **Figure 20**).

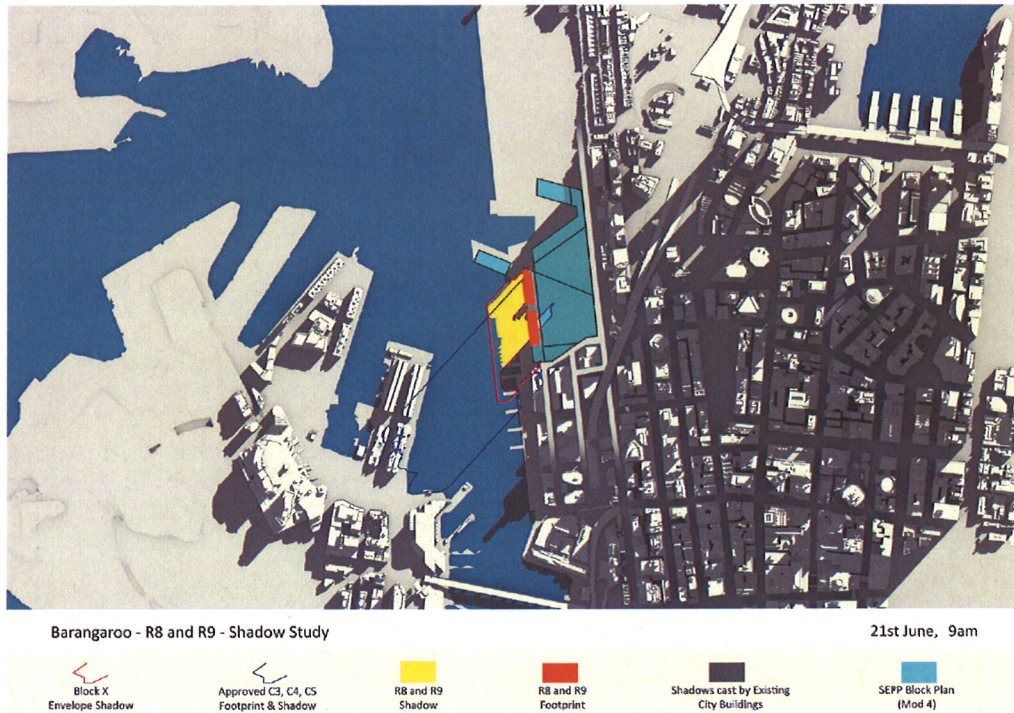


Figure 20: Shadow at 9am on 21 June

21 June 12pm

The shadow analysis indicates that 12pm no shadowing extends over Darling Harbour, and the shadow has moved to Globe Street and over Block X (see **Figure 21**).

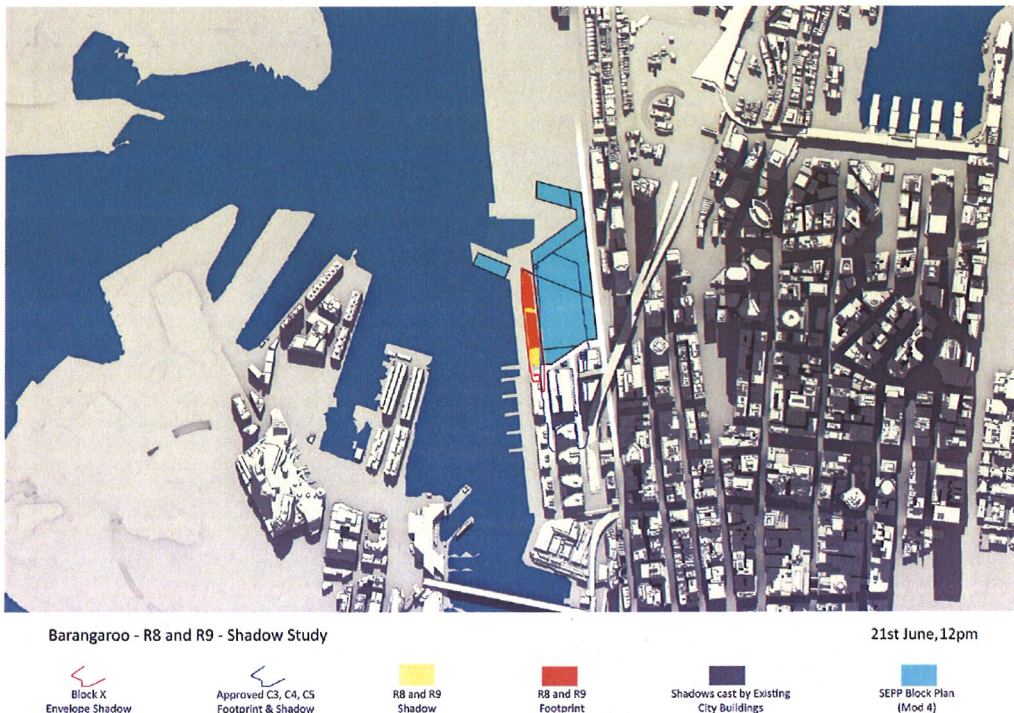


Figure 21: Shadow at 12pm on 21 June

21 June 3pm

The shadow analysis indicates that at 3pm shadowing will extend over the podiums of commercial buildings C4 and C5 and Globe Street (see **Figure 22**).

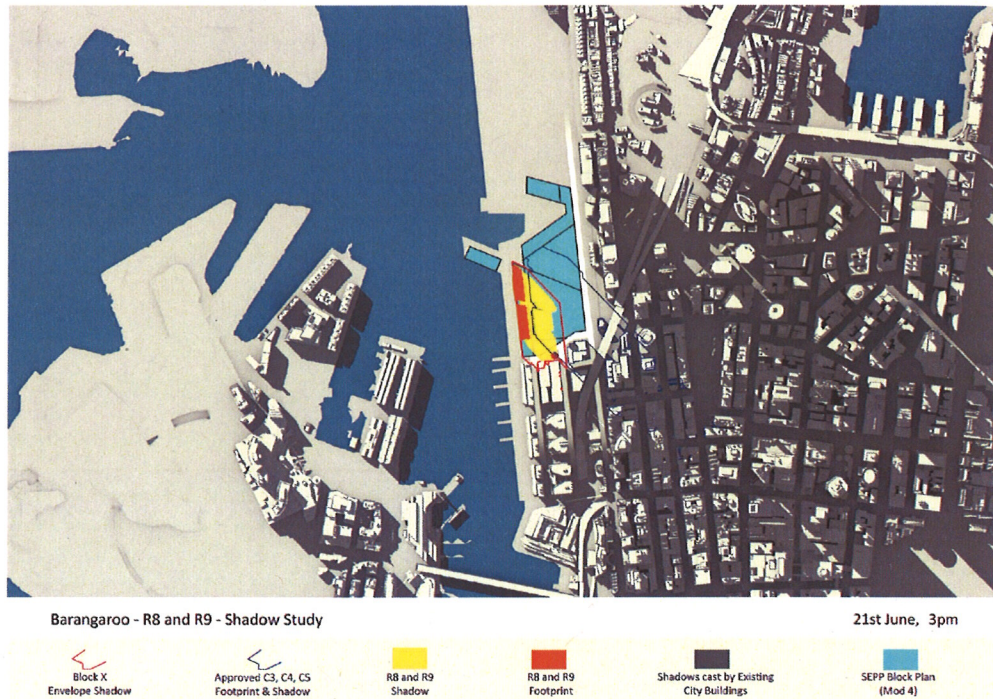


Figure 22: Shadow at 3pm on 21 June

The department considers that the additional overshadowing impacts are acceptable given that:

- The shadows from residential buildings R8 and R9 are less than the Block X shadows predicted under MOD 4 which established the Block X building envelope;
- The building heights comply with the maximum height limits; and
- Additional overshadowing over the public domain and Darling Harbour is minor and these areas are capable of receiving adequate sunlight during the day.

5.6 Reflectivity

A Reflectivity Study was provided by ARUP and was undertaken in accordance with the Hassall methodology, which is considered the current best practice industry standard in the absence of an applicable Australian Standard. The study found that residential buildings R8 and R9 performed well in terms of solar reflectivity, and glare affecting motorists is not expected to exceed the limits of acceptability.

The department has reviewed the proponent's reflectivity study and notes that:

- The different façade treatments to the buildings either do not reflect the sun towards traffic or the intensity of reflections are below the limit of acceptability;
- Each façade aspect will have a maximum specular reflectance of 20% in accordance with Council's regulations and will not cause unacceptable glare; and
- The buildings will not result in any unacceptable glare impacts for pedestrians.

The department is satisfied that the project would not result in any unacceptable glare impacts for drivers, pedestrians or the occupants of the surrounding buildings, particularly as the study was based on worst case scenarios which did not take into account overshadowing effects from other buildings, vegetation or non reflective cladding elements. However, as the results of the studies were premised on the reflectivity of the glazing not exceeding 20 per cent, the department has recommended the imposition of a condition limiting the reflectivity of materials used on both buildings to 20 per cent.

5.7 Operational Noise

The EA included an Operational and Constriction Noise Vibration Report prepared by Renzo Tonin and Associates, which considered the noise impacts generated by the operation of the residential buildings. The report generally assessed the noise emissions from the site and noted the nearest residential receiver is 180 metres away at 38 Hickson Road, Millers Point.

The report highlighted that operational noise from residential buildings R8 and R9 will be from the mechanical plants located predominantly on the rooftops, and that occupiers of the apartments will be the most affected by noise. Sources of potential noise from the mechanical plant equipment include rooftop exhausts, air-conditioning and refrigeration.

Whilst specific details of the mechanical plant equipment is yet to be finalised, the report proposes a number of noise mitigation measures, including:

- Strategic positioning of plant equipment;
- Silencers and acoustic attenuators;
- Acoustic lined and lagged ductwork;
- Acoustic screens and barriers;
- Partially or fully enclosed acoustic enclosures; and
- Glazing of apartments to ensure an ambient internal noise environment.

Given the above, the department is satisfied that the operation of the proposed residential buildings would not generate any adverse noise impacts. The department has recommended the imposition of a condition controlling mechanical plant noise, and has also recommended a condition which requires development applications to be lodged with the relevant consent authority for the future use of the retail areas, which may include food and drink premises. This will enable an assessment of the potential noise impacts of the future retail premises at the appropriate time.

5.8 Transport

A Supplementary Transport Management and Accessibility Plan (STMAP) has been prepared for the project which is based on the TMAP approved under the Barangaroo Concept Plan (as modified) to provide an integrated approach in the planning and delivery of transport and access arrangements for the precinct.

The STMAP identifies mode split targets for the journey to work in the Barangaroo precinct: 83 per cent by public transport (63 per cent via rail, 18 per cent via bus, 2 per cent via light rail), 12 per cent pedestrian/other, four per cent via car and one per cent via ferry. These rates are consistent with the rates in the TMAP and are representative of the precinct's expected high usage of public transport, walking and cycling and a correspondingly low rate of car usage.

The TMAP outlines a proposed road hierarchy for the Barangaroo precinct, where Hickson Road is the key road for the precinct, and provides connections to the Sydney CBD via Napoleon Street, Margaret Street and Sussex Street. Local roads are proposed within the site to support access to commercial, residential and recreational uses at Barangaroo.

In addition to the TMAP, the Government released the Barangaroo Integrated Transport Plan (BITP) in August 2012. It was prepared by the Barangaroo Transport Taskforce, chaired by the Director-General, Transport for NSW and included representatives from the department, Council, Infrastructure NSW, the Department of Premier and Cabinet, the BDA and Lend Lease. The BITP details a range of transport actions for Barangaroo, and recommends that short-term initiatives and detailed planning for long-term initiatives should commence immediately, including:

- Construction of Wynyard Walk (currently under construction);
- Construction of City Walk Bridge (DGRs issued);
- Planning for ferry wharves at Barangaroo;
- Upgrades to Wynyard Bus Interchange;
- Upgrade of Wynard Station;

- Extension of bus services to Barangaroo;
- Creation of pedestrian and cycle paths linking Barangaroo to the CBD;
- Set aside a light rail corridor in Hickson Road or dedicated bus lane; and
- Additional rail capacity on the Western Line.

The department anticipates that the actions above will ensure that public transport and access to the Barangaroo site will ensure that the anticipated mode share targets are realised, and that the occupants and workers of residential buildings R8 and R9 have optimal transport connections and services.

5.8.1 Traffic

The STMAP estimated that the residential buildings, including the retail uses, will generate 24 (18 trips in & 6 trips out) traffic movements in the AM peak hour and 24 (6 trips out and 18 trips in) traffic movements in PM peak hour. When combined with the vehicle movements forecast for the commercial buildings, it is estimated that the total traffic generation in peak hours would be 443 trips in AM peak and 413 trips in PM peak. These figures reveal that the contribution to total traffic generation by the residential buildings is insignificant at approximately 5 per cent during AM peak and PM peak periods. These movements are summarised in **Table 6** below.

Table 6: Cumulative Peak Hour Traffic Generation

Traffic Generation	AM Peak Hour			PM Peak Hour		
	No. of trips	In	Out	No. of trips	In	Out
C3/C4/C5 Buildings	419	255	164	389	149	240
R8/R9 Buildings	24	6	18	24	18	6
Total Traffic Generation	443	261	182	413	167	246

The previous STMAP prepared for the commercial buildings examined in detail the current and future stage performance of the five nearest and most relevant intersections to the site. These included:

- Hickson Road and Globe Street (Priority Controlled - Temporary);
- Napoleon Street and Hickson Road (Priority Controlled - Existing, Traffic Signals - Future);
- Sussex Street and Shelley Street (Traffic Signals);
- Sussex Street and Erskine Street (Traffic Signals); and
- Erskine Street and Shelley Street (Traffic Signals).

The conclusions drawn in the STMAP were that no intersections would reach saturation and that the traffic generated by the proposed developments could be accommodated within the existing road network. The subject STMAP has drawn the same conclusion and department has reviewed the subject STMAP and is satisfied that the additional traffic generated by residential buildings R8 and R9 is minor and can be accommodated within the existing road network.

5.8.2 Vehicular Access

Vehicular access to the site is proposed to be provided from Globe Street which will connect to Hickson Road and Lime Street. Vehicular entrances to access the car parking areas for residential buildings R8 and R9 are being constructed as part of the approved basement car park (MP 10_0023).

5.8.3 Car Parking

The application seeks approval to allocate 176 car parking spaces (comprising 172 residential and 4 retail spaces) for the buildings' use within level B2 of the basement car park (**Figure 4**). Service and delivery vehicles will use the loading dock on level B1. Approximately 12 on-street car parking spaces on Globe Street will facilitate pick-up and drop-off.

The number of residential spaces has been determined having regard to the relevant parking rates approved under the Concept Plan (as modified), based on the number of bedrooms in each apartment (see **Table 10** below). For other uses (including retail) the Concept Plan refers to relevant City of Sydney Council rates, which were originally calculated using a formula in Sydney LEP 2005 (Note: Sydney LEP 2012 excludes the Barangaroo site and calculates rates according to categories outlined on the Land Use and Transport Integration Map).

Table 10: Compliance with the Concept Plan Car Parking Rates
Car Parking Requirements for Residential Buildings R8 and R9

Use	Parking Rate	Maximum Permitted Spaces	Spaces / Compliance
Residential R8 (82 apartments)	1-bedroom – 1 space /2 units 2-bedroom – 1.2 spaces /unit 3-bedroom – 2 spaces /unit	23 x 1-bedroom units = 11.5 spaces 47 x 2-bedroom units = 56.4 spaces 12 x 3-bedroom units = 24 spaces	92 / Yes
Residential R9 (77 apartments)	1-bedroom – 1 space /2 units 2-bedroom – 1.2 spaces /unit 3-bedroom – 2 spaces /unit	24 x 1-bedroom units = 12 spaces 48 x 2-bedroom units = 57.6 spaces 5 x 3-bedroom units = 10 spaces	80 / Yes
Retail 2120m ² of FSA	As per 'other' uses in the Sydney LEP 2005 ¹	0.5	4 / No
TOTAL		172.5	176 / No

Note¹: The formula for calculating 'other uses' is as follows:

Maximum Number = Total 'Other' FSA (2120)/Total FSA (430,275) within development x Site Area (5,032)/50 = 0.5 spaces

The department notes that the residential car parking proposed complies with the rates required. However, the rates for retail car parking have been calculated incorrectly by the proponent as they have included the site area of the whole of Barangaroo not the site area of the subject application. This has resulted in 4 spaces being proposed when 0.5 is permitted.

It is noted that permitting 0.5 space is not practical and therefore the department has recommended a condition that 1 retail car parking space is provided, but not for the exclusive use of R8 and R9. The requirement will be that the space is to be shared in equal halves with other retail uses in other buildings (approved or proposed) at Barangaroo South. Details of how this space will be shared and by which building(s) must be provided prior to the issue of the relevant Construction Certificate.

5.8.4 Bicycle Parking

The application states that bicycle parking rates will be consistent with Council's requirements. The development seeks approval for 1 bicycle space for each residential dwelling (159) and 1 space per 100 dwellings for residential dwelling visitors (16).

The residential bicycle parking spaces will be located in secure cages on level B1 of the basement car park. Visitor spaces will be located near the entrances to the buildings. No bicycle spaces are proposed for retail workers or visitors.

Statement of Commitment 47 of the Concept Plan approval (as modified) specifies that bicycle parking facilities will be provided in accordance with Council's requirements.

The department notes that since MOD 4 to the Concept Plan was approved, the Council has adopted the *Sydney Development Control Plan 2012*, which seeks to increase bicycle parking

rates across the City. The previous rate under *Central Sydney DCP 1996* was 1 bicycle space per 100 car spaces, which is far less than the amount of bicycle spaces required under the new DCP or the TMAP for Barangaroo. **Table 11** below summarises the requirements for bicycle facilities as specified in the *Sydney DCP 2012*, *Central Sydney DCP 1996* and the TMAP.

Table 11: Comparison between Central Sydney DCP 1996, Sydney DCP 2012 and TMAP Bicycle Parking Requirements

Control	Number of Bays Required		Compliance
Sydney DCP 2012	R8	R9	
1 space per residential apartment	82	77	Yes, 159 proposed
1 space per 10 residential apartments (visitor)	8.2	7.7	Yes, 16 proposed
1 space per 25m ² (shops, restaurant or cafe) (employee)	32 (807m ²)	37 (815m ²)	No – 0 proposed
2 spaces plus then 1 space per 100m ² over 100m ² (shops, restaurant or cafe) (customer / visitor)	9	9	No – 0 proposed
1 space per 100m ² (pub) (employee)	8 (807m ²)	8 (815m ²)	No – 0 proposed
1 space per 100m ² (pub) (customer / visitor)	8 (807m ²)	8 (815m ²)	No – 0 proposed
Sydney DCP 2012			
1 space per 100 car parking spaces	0.92 (92)	0.8 (80)	Yes – 185 proposed
TMAP			
4% of workers (135 workers)	2.7	2.7	No – 0 proposed

The above rates reveal that the development complies with bicycle parking rates required under *Sydney DCP 2012* for residential owners and visitors. Moreover, it reveals that the rates far exceed the previous requirements under the former *Central Sydney DCP 1996*. These rates are supported.

The proponent has advised that the development does not seek to provide any bicycle parking for retail workers or visitors. Although the department notes that the overall amount of bicycle parking for the development exceeds *Central Sydney DCP 1996*, bicycle parking should nevertheless be provided for retail workers and visitors.

As a guide, the rates applied for commercial buildings C3, C4 and C5 were based on five per cent of employees (this was 1% more than the TMAP). It is therefore considered reasonable that the minimum bicycle parking rates for the retail areas should be based on the TMAP. For this reason, the department has recommended a condition requiring bicycle spaces to be calculated in accordance with 4 per cent of the worker population (135 workers). Consequently, this will require 5 bicycle spaces for retail workers.

The department does not agree with the proponent that retail workers in residential buildings R8 and R9 should not be provided with bicycle spaces. The recommended condition requiring 5 bicycle spaces will ensure sustainable transport options are available for all workers at Barangaroo.

5.9 Environmentally Sensitive Design (ESD)

The EA was accompanied by a BASIX certificate and a sustainability report, which were subsequently updated in the PPR. The proposed buildings have a number of sustainability initiatives which ensure the development meets its BASIX requirements and delivers sustainable buildings. These include:

- Commitment to a 5 Star Design and As-Built Green Star rating under the Green Star Multi-Unit Residential v1 tool;

- Consumption of approximately 70% less water than average dwellings in NSW due to rainwater capture and re-use;
- The construction of the buildings resulting in approximately 50% less greenhouse gas emissions;
- Energy efficient appliances;
- Concrete construction of floors and roof;
- Gas-fired boiler to be provided for each building to meet domestic hot water demands;
- Central heating and cooling system connected to precinct chilled water system;
- Photovoltaic systems on the rooftops;
- Energy efficient LED lighting;
- Use of sustainable and recycled materials; and
- Majority of common areas naturally ventilated through louvers and windows.

In addition to the above initiatives, the department notes that the development will also benefit from the sustainability initiatives proposed for the entire Barangaroo precinct, including the district cooling plant, on-site renewables strategy and precinct recycled water plant.

The department is satisfied that the proposed development adequately incorporates the principles of ESD in accordance with the objects of the EP&A Act. The department has recommended the imposition of conditions requiring the proponent to obtain certification that the buildings achieve a Design and As-Built 5 Star Green Star rating.

5.10 Contamination and Remediation

The site area of residential buildings R8 and R9 and associated works sit partly to the west of the approved basement car park under MP10_0023, and for that part of the site that stands above the basement car park, remediation will have already been approved under that project.

The Human Health and Ecological Risk Assessment (HHERA) and Remedial Action Plan (RAP) outline the remediation methodologies and site clean-up criteria. The HHERA was approved by the OEH on 11 July 2011, and the RAP was approved by the Minister for Planning and Infrastructure on 17 August 2011. To date, the HHERA and RAP have been relied on for remediation works associated with the basement car park and commercial buildings C3, C4 and C5.

For that part of the site not above the basement car park, Graeme Nyland, the Site Auditor for the entire Barangaroo site, confirmed on 20 September 2012, that the approved HHERA and RAP can be relied upon to undertake the remediation works associated with the remainder of the site for residential buildings R8 and R9. The proposed remedial option for the works is excavation and either beneficial re-use of material (within the public domain) or off-site disposal of surplus material, or retention of material in-situ.

Given the Site Auditor's conclusions, the department is satisfied that the approved HHERA and RAP can be relied upon to ensure that the R8 and R9 project areas will be remediated in accordance with the requirements of SEPP 55. In order to ensure this occurs, the department has recommended the imposition of conditions requiring:

- All remediation works to be undertaken in accordance with the *Human Health and Ecological Risk Assessment, Declaration Site (Development Works) Remediation Works Area – Barangaroo*, as approved by the OEH on 11 July 2011, and the *Amended Remedial Action Plan, Barangaroo – ORWS Area* dated 7 July 2011, as approved by the Minister for Planning and Infrastructure on 17 August 2011;
- The proponent to submit a detailed site audit summary report, site audit statement and validation report to the EPA (OEH), the Director-General, the Certifying Authority, and the Council within six months of the completion of remediation works;
- The site auditor to verify that any excavated material for use or disposal offsite at Barangaroo is managed appropriately and in compliance with the relevant legislation and any relevant approved materials management plans; and

- The proponent to notify the Council that remediation works have been completed, as per the requirements of clauses 17 and 18 of SEPP 55.

These conditions have been previously prepared in consultation with the EPA, as per the recommendations of the Barangaroo Independent Remediation Review.

5.11 Construction Impacts

An Environmental Construction and Site Management Plan (ECSMP) has been prepared to address environmental issues associated with the construction of residential buildings R8 and R9, including:

- Site management;
- Construction methodology;
- Environmental management;
- Implementation of noise, vibration, air quality, stormwater management, waste and traffic management controls;
- Erosion and sediment control measures;
- Stakeholder Engagement Strategy; and
- Auditing and monitoring procedures.

The ECSMP forms part of a suite of management plans and reports (including a Construction Traffic Management Plan (CTMP), Operational and Construction Noise and Vibration Report (OCNVR), Air Quality Impact Assessment (AQIA), Waste Management Plan (WMP)) which have been prepared by the proponent, and which are essentially an update of the ESCMP and plans/reports prepared to manage the environmental issues associated with the cumulative impacts of the simultaneous construction of the basement car park and commercial buildings C3, C4 and C5, as well as residential buildings R8 and R9.

Given the length of construction works at Barangaroo South, and the likelihood of several buildings being constructed simultaneously, the department supports this approach. Furthermore, the department also notes that all construction related environmental impacts are regulated under Environmental Protection Licence (EPL) No. 13336. The department has recommended the imposition of a condition requiring the proponent to comply with the requirements of EPL 13336 at all times.

The department has reviewed the ECSMP and management plans/reports in consultation with the EPA and other relevant government agencies, and is satisfied that they provide a suitable framework for managing the works associated with the construction of the proposed buildings. In addition, the department has recommended the imposition of conditions, including construction noise and vibration limits, limiting construction hours, and requiring the proponent to undertake all works in accordance with the approved OCNVR, AQIA, CTMP, WMP and EPL 13336. Furthermore, the department has recommended the proponent update previously approved construction management sub-plans, including the Water and Stormwater Management Sub-Plan, Air Quality and Odour Management Sub-Plan, Noise and Vibration Management Sub-Plan and Spoil and Waste Management Sub-Plan. This will have to be submitted to the EPA for review prior to being submitted to the Certifying Authority and the Director-General.

5.12 Affordable Housing

The department acknowledges there were questions raised from City of Sydney Council as to why the EA did not address the issue of affordable housing. It is understood by the department that the reason behind the matter not being considered is that no affordable housing is proposed as part of the development, and that this issue would be considered in future residential development applications.

In the response to submissions, the proponent stated that the issue of housing affordability is addressed by the Barangaroo Housing Strategy, which was prepared by the Barangaroo Delivery Authority in October 2012. The Barangaroo Housing Strategy commits to providing 2.3% of

residential GFA (approximately 36 apartments) as key worker housing when not less than 75% of the total residential GFA is complete. It is understood that key worker housing would be operated and managed by community housing providers holding a 99-year lease.

The delivery of key worker housing is included in the development agreement with BDA and Lend Lease, which defines key worker housing as:

Key worker housing means any nurse, teacher, child-care worker, ambulance officer, member of the police force, member of the fire brigade or retirees with an income of +/- 50% of the median household income for the Sydney (Statistical Division) (as that division is defined for the purposes of the ABS).

The department supports housing diversity at Barangaroo and will ensure that the future residential developments deliver affordable housing for key workers consistent with the Barangaroo Housing Strategy.

5.13 Public interest

The proposal is deemed to be in the public interest as it will continue to facilitate the redevelopment of Barangaroo which will provide the following key public benefits:

- Creation of 159 dwellings for new residents;
- Creation of approximately 600 construction jobs;
- Creation of approximately 135 operational jobs; and
- Provision of new public domain areas providing new links between Barangaroo and the Sydney CBD.

6. CONCLUSION

The department has assessed the EA and considered all issues raised in submissions. The key issues relating to the assessment of the proposed residential buildings R8 and R9 include: compliance with the Barangaroo Concept Plan (as modified), built form and urban design, residential amenity, transport and traffic, contamination and remediation, and construction related impacts.

The department considers that the proposal generally complies with the building envelopes, GFA and height controls for the site approved under the MD SEPP and the Concept Plan (as modified), and will provide a high quality built form and public domain.

The department has reviewed the EA and duly considered advice from public authorities as well as issues raised in public submissions in accordance with section 75(2) of the EP&A Act. All key environmental issues associated with the proposal have been assessed, and appropriate conditions are recommended to manage residual impacts.

The development is consistent with the strategic objectives for the area, the NSW 2012, *Draft Metropolitan Plan for Sydney to 2031*, and the requirements of relevant planning instruments, policies and objectives. And the delivery of the Government's public transport objectives for Sydney and the CBD, as relevant to the Barangaroo-Wynyard precinct will be sufficient to service demand created by the proposed development.

The department is of the view that the recommended conditions and implementation of the measures detailed in the proponent's EA, PPR and SOC adequately mitigate the environmental impacts of the proposal.

The department considers the site to be suitable for the proposed development and that the application is in the public interest. Consequently, the department recommends approval of the project, subject to the conditions outlined in the instruments of approval.

7. RECOMMENDATION

That the Executive Director, Development Assessment Systems & Approvals:

- a) **Consider** the findings and recommendations of this report;
- b) **Approve** the project application for residential buildings R8 and R9 (MP11_0002), subject to conditions, under section 75J of the *Environmental Planning and Assessment Act, 1979*;
- c) **Sign** the attached Instrument of Approval (**Tag A**).



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Director
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Chris Wilson
Executive Director
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28.6.13

APPENDIX A ENVIRONMENTAL ASSESSMENT

See the department's website at:

<http://majorprojects.planning.nsw.gov.au>

APPENDIX B SUBMISSIONS

See the department's website at:
<http://majorprojects.planning.nsw.gov.au>

APPENDIX C PROPONENT'S RESPONSE TO SUBMISSIONS

See the department's website at:
<http://majorprojects.planning.nsw.gov.au>

APPENDIX D CONSIDERATION OF ENVIRONMENTAL PLANNING INSTRUMENTS

State Environmental Planning Policy (Major Development) 2005

Detailed consideration of the provisions in the MD SEPP are found at section 5.1 of this report.

State Environmental Planning Policy No.55 (Remediation of Land)

The EA is accompanied by a letter from the Barangaroo site auditor which confirms that the RAP and HHERA approved by the Minister for Planning and Infrastructure on 17 August 2011 for the basement car park project (and subsequently commercial buildings C3, C4 and C5), can be relied on for the development.

The RAP confirms that the site will be made suitable for residential and public domain/recreational purposes. The department has recommended conditions requiring all remediation works associated with the buildings be undertaken in accordance with the RAP. Further conditions are recommended which require the proponent to obtain a site audit statement at the completion of the project, which must verify that the land is suitable for the proposed uses based on the remediation works that have been undertaken. On completion of the remediation works, the proponent must notify Council as required by clauses 17 and 18 of SEPP 55.

On the basis of the above, the department considers that the requirements of SEPP 55 have been complied with.

State Environmental Planning Policy (Infrastructure) 2007

Clause 88 of the SEPP requires development applications adjacent to or within rail corridors to be referred to rail authorities. Although this clause is not applicable to Part 3A applications, the department nevertheless referred the application to Transport for NSW for its review.

In its submission on the EA (dated 9 January 2013), Transport for NSW stated that while they had not completed a technical review of the engineering plans on the Metro corridor and therefore could not support the plans as proposed, it would continue to work with the proponent to ensure protection of the Metro corridor.

The proponent's response to submissions received on 15 May 2013, stated that Transport for NSW has now provided its formal approval in relation to engineering issues such as piling and transfer slabs. This approval was granted on 15 March 2013. To ensure that the integrity of the corridor is maintained, the department has also recommended a condition which requires further reviews of plans (if required) to be undertaken in accordance with the Department of Transport Framework Development Deed for Barangaroo dated 15 November 2011.

State Environmental Planning Policy No.65 Design Quality of Residential Flat Buildings

SEPP 65 seeks to improve the design quality of residential flat buildings through the application of a series of 10 design principles. In addition to the SEPP, the Residential Flat Design Code (RFDC) sets broad parameters within which good design of residential flat buildings can occur by illustrating the use of development controls and consistent guidelines. The department's assessment of the application against the SEPP 65 design principles and the 'rules of thumb' outlined in the RFDC is provided in **Tables 1 and 2** below.

Table 1: Compliance with SEPP 65 Design Principles

Principle	Department's Response
Principle 1: Context	The proposal is located within close proximity to all the amenities of the CBD, the Rocks and Darling Harbour. The orientation of R8 and R9 towards Sydney Harbour benefits from the solar access and unobstructed water views. The two buildings are split by an important view corridor visually connecting the CBD to the water's edge. The proposal will contribute to its wider context by activating an extended public promenade along the harbour as well as defining a new street frontage within the Barangaroo site. The proposal would be consistent with the approved Barangaroo Concept Plan for Block X. The proposal would not have any detrimental impacts on the amenity of the approved commercial towers in Barangaroo South.

Principle 2: Scale	The proposed buildings comply with the maximum height controls within the approved concept plan. The buildings are generally consistent with the numeric controls of the State Significant Site listing within the Major Development SEPP.
Principle 3: Built Form	The proposed buildings have been designed to be consistent and compatible with the overall appearance and character of the redevelopment site. The building elevations respond to the changing context and reduce building mass through setbacks and articulated facade treatments. Overall, R8 and R9 achieve a high quality built form for Barangaroo South.
Principle 4: Density	The proposal provides a good diversity and density of apartment types from 1-bedroom apartments to 3-bedroom apartments. The units are of an appropriate size and scale to facilitate a range of living arrangements. The proposed density complies with the approved concept plan (as modified) and the State Significant Site listing.
Principle 5: Resource, Energy and Water Efficiency	A BASIX certificate was lodged with the EA and updated in the PPR. A condition has been recommended to ensure all BASIX commitments are implemented prior to the issue of an Occupation Certificate. The proposed residential development will benefit from the Barangaroo precinct sustainability initiatives such as the district cooling plant, on-site renewable strategy and precinct recycled water plant. The proposal proposes a 5 Star Design and As-Built Green Star ratings under the Green Star Multi-Unit Residential v1 tool.
Principle 6: Landscape	The proposal includes public domain works, balcony planters, green vertical walls, landscaped private and communal roof terrace to increase amenity and privacy of the apartments. Planting has been selected to respond to particular site conditions with a high percentage of low water dependant species.
Principle 7: Amenity	The proposal generally complies with the requirements of SEPP 65 and the recommended standards of the RDFC in terms of achieving satisfactory residential amenity. Non-compliances with RDC rule of thumb controls are discussed in Section 5.4.
Principle 8: Safety and Security	All units have been provided with areas of secure storage and private open space. There is a clear distinction between public and private space within the development site. The proposal will generate the opportunity for good passive surveillance and active uses adjacent to and within the public domain without compromising the privacy of the residents.
Principle 9: Social Dimensions and Housing Affordability	The development provides a range of accommodation types, including 1-bedroom, 2-bedroom and 3-bedroom apartments. A total of 12 adaptable units are provided within R8. The unit mix complies with the requirements of the Concept Plan. In addition, the ground floor residential lobbies are positioned along Globe Street which is seen as an active filled with shops, coffee bars and restaurants. Affordable housing is not proposed for the buildings but is proposed for future residential buildings consistent with the Barangaroo Housing Strategy (2.3%).
Principle 10: Aesthetics	The building facades are articulated and include a variety of materials, textures and colours to provide an interesting streetscape appeal. Both buildings incorporate landscaping to increase residential amenity and flexible facade treatments to offer environmental and privacy control. The facades respond to the streetscape as highlighted by the organic form at the northern end of R8 which is sympathetic to the public domain.

Table 2: Residential Flat Design Code Compliance Table

RDFC Requirement		Stage 3 Proposal	Compliance
Part 1 Local Context			
Building depth	Apartment depth of 10 to 18 metres.	<u>R8</u> Overall width (east-west) varies between 16.6 metres to 17.7 metres. <u>R9</u> Typical depth is between 16 metres and 17 metres.	Yes
Building separation	Over 9-storeys: <ul style="list-style-type: none"> 24 m between habitable rooms/balconies 18 m between habitable rooms/balconies and 	Separation between R8 and R9 is 12 metres and 16 metres from the podium of commercial buildings C4 and C5 (to the east).	Non compliant. See Section 5.4.

	non-habitable rooms <ul style="list-style-type: none"> 12 m between non-habitable rooms. 		
Part 2 Site Design			
Deep soil zones	Min 25% of the open space of a site should be a deep soil zone. Exceptions may be made in urban areas and the stormwater treatment must be integrated with the design.	There is no potential for deep soil zones as the site is located within dense urban environment. Appendix O of the EA provides a Stormwater Management Plan for the site.	This will be evaluated when the public domain plan is submitted to the Director-General
Open space	Between 25 % and 30% of total site area; Dense urban areas unable to achieve the recommended open space amount must demonstrate residential amenity is provided in the form of increased private open space and/or in a contribution to public open space.	R8 – each apartment has private open space predominantly facing the harbour increasing the amenity. These balconies contain adjustable screens, offering flexibility in solar and privacy control. R9 communal roof area is approximately 400 m ² (25% of the site)	Yes
Planting on Structures	Recommended soil provision: Large trees – 1.3 metres deep, soil area 10 metres x 10 metres, volume 150 m ³ Medium trees – 1 metre deep, soil area 6 metres x 6 metres, volume 35 m ³ Small trees – 0.8 metres deep, soil area 3.5 metres x 3.5 metres, volume 9 m ³ Turf – 100mm – 300mm soil depths.	<u>R8</u> Integrated landscape and planter beds on Level 7 and Level 8 are provided. <u>R9</u> Communal rooftop provides extensive and intensive planting including turf, raised planters, feature trees and custom climbing plants on steel frame and mesh.	These details will be considered when the detailed design of the rooftop is prepared
Stormwater Management	To minimise the impacts of development on the health and amenity of natural waterways; To minimise discharge of sediment and other pollutants to the urban stormwater drainage system during construction activity.	Stormwater management plan has been prepared by Cardno dated 18 October 2012	Yes
Safety	To ensure developments are safe and secure for residents and visitors.	CCTV monitoring will be provided to the entry lobbies, retail common areas, car park, building entry and exit points. Lobbies provide secure access to residents. All apartments are equipped with intercom. Passive surveillance will also occur as a result of the operation of retail and residential uses. R8 full height glass front lobbies face directly onto Globe Street maximising visibility and safety at lobby entrances. R9 communal rooftop has secure access to the R9 residents and their visitors.	Yes

Visual privacy	To provide reasonable levels of visual privacy externally and internally, day and night; To maximise outlook and views from principle rooms and private open space without compromising visual privacy.	The buildings have external adjustable screens to help achieve internal and external privacy, despite non-compliance to building separation requirements.	Partial non compliance. See section 5.4
Pedestrian access	Identify the access requirements from the street to the apartment entrance; Comply with AS 1428 Provide barrier free access to 20% of apartments; Provide barrier free access to at least 20% of dwellings in the development.	Both buildings provide access to lobbies off Globe Street.	Yes
Part 3 Building Design			
Apartment layout	Single aspect apartments should be limited in depth to 8 metres from a window; Kitchens should be no more than 8 metres from a window; The width of cross-through apartments over 15 metres deep should be 4 metres or greater	<u>Depth of Single Aspect Apartment</u> R8 – Living areas between 5.5 m and 7.5 m from a window R9 – Living areas between 6 m and 7 m from a window. <u>Kitchen 8m from Window</u> R8 – 30 – 36% R9 – 42 – 54%	Yes Non compliant. See Section 5.4.
Balconies	Primary balconies to have minimum depth of 2 metres	<u>R8</u> Balconies achieve a minimum depth of 2 metres across the west façade A total of 7 north facing 1 bedroom apartments have a 1.8 metre balcony depth. <u>R9</u> Balcony depth varies between 2.2 metres and 2.8 metres	Partial non compliance Yes
Ceiling heights	2.7 metres minimum height for habitable rooms; 3.3 metres minimum height for ground floor retail or commercial.	Residential floors have ceiling heights at a minimum of 2.7 metres for habitable rooms and 2.4 metres for non-habitable rooms R8 – 4.8 metres ceiling height for ground floor retail R9 – 4.5 metres ceiling height for ground floor retail	Yes
Internal circulation	Where units are arranged off a double-loaded corridor, the number of units accessible from a single core corridor should be limited to 8.	Generally 3 units per core and 2 units per core on upper levels.	Yes
Storage	6 m ³ for 1-bedroom apartments 8 m ³ for 2-bedroom apartments	All apartments achieve the required storage amount with 50% located within the basement	Yes

	10 m ³ for 3-bedroom apartments		
Daylight access	70% of apartments in dense urban areas to have minimum of 2 hours of sunlight in living rooms and private open space between 9 am and 3 pm in the winter; Maximum 10% of single-aspect apartments shall have a southerly aspect	<u>Living Rooms</u> R8 – 30 – 36.5% R9 – 11 – 14.2% Total – 41 – 25.7% <u>Private Open Space</u> R8 – 76 – 92.6% R9 – 77 – 100% Total – 153 - 96.2% <u>Southerly Aspect</u> No south facing apartments single-aspect apartments.	Non complaint. See section 5.4. Yes
Natural ventilation	Building depths which support natural ventilation range from 10 metres to 18 metres; 60% of residential units should be naturally ventilated; and 25% of kitchens should have access to natural ventilation	Both buildings have a depth not greater than 18 metres. <u>Cross ventilation</u> R8 – 82% R9 – 69% <u>Kitchen ventilation</u> R8 – 100% R9 – 100%	Yes Yes Yes
Facades	Objectives: To promote high architectural quality; To ensure new developments have facades which define and enhance the public domain and desired street character; To ensure that building elements are integrated into the overall building form and façade design	R8 and R9 building facades are highly articulated and integrated into the building form, and include a variety of materials, textures and colours to provide an interesting streetscape appeal.	Yes

Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005

Barangaroo is located within the boundaries of the Sydney Harbour Catchment and as such is subject to the provisions of Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 (Sydney Harbour REP). The Sydney Harbour REP aims to provide a clear and consistent planning framework to protect and enhance the unique attributes of the Harbour.

Within the Sydney Harbour REP, Barangaroo is identified as being within the 'Foreshores & Waterways Area' boundary. Part 3, Division 2 of the Sydney Harbour REP refers to matters which are to be taken into consideration by consent authorities before granting consent for development. Buildings R8 and R9 are generally consistent with the relevant provisions and matters for consideration set out in Clauses 20 to 27 of the Sydney Harbour REP, namely:

- biodiversity, ecology and environment protection
- public access to, and use of, foreshore and waterways
- interrelationship of waterway and foreshores and waterways
- foreshore and waterways scenic quality
- maintenance, protection, enhancement of views.

APPENDIX E SUMMARY OF PROJECT APPROVALS TO DATE

Barangaroo South	Project	Determination
Basement car park MP10_0023 MP10_0023 MOD 1 MP10_0023 MOD 2 MP10_0023 MOD 3 MP10_0023 MOD 4	<ul style="list-style-type: none"> Basement car park (880 spaces) Modification to basement car park (901 spaces) Amendment of conditions A8 & A10 Deletion of car park levels CP1 to CP5, reduction in car parking spaces from 901 to 779, relocation of bicycle parking, amendments to conditions Temporary concrete batching plant 	<ul style="list-style-type: none"> 2 Nov 2010 3 March 2011 Withdrawn 19 April 2012 21 Nov 2012
Commercial building C3 MP11_0044 MP11_0044 MOD 1	<ul style="list-style-type: none"> Erection of a 48-storey commercial building (C3) with ground floor retail. Amendment of Condition A7 	<ul style="list-style-type: none"> 24 April 2012 18 Feb 2013
Commercial building C4 MP10_0025 MP10_0025 MOD 1 MP10_0025 MOD 2 MP10_0025 MOD 3	<ul style="list-style-type: none"> Erection of a 43-storey commercial building (C4) with ground floor retail. Increase in GFA, internal & external alterations Amendment of Condition A7 Changes to façade and podium 	<ul style="list-style-type: none"> 3 March 2011 18 Feb 2013 18 Feb 2013 28 May 2013
Commercial building C5 MP10_0227 MP10_0227 MOD 1	<ul style="list-style-type: none"> Erection of a 48-storey commercial building (C3) with ground floor retail. Amendment of Condition A7 	<ul style="list-style-type: none"> 24 April 2012 18 Feb 2013
Headland Park	Project	Determination
Early works MP10_0047	<ul style="list-style-type: none"> Headland park early works 	<ul style="list-style-type: none"> 8 Nov 2010
Main works MP10_0048 MP10_0048 MOD 1 MP10_0048 MOD 2 MP10_0048 MOD 3	<ul style="list-style-type: none"> Headland park main works, including northern cove, void space and car park. Amendment to conditions Amendment to conditions Amendments to car park and pedestrian linkages and roof of the void space (future cultural facility) 	<ul style="list-style-type: none"> 3 March 2011 Withdrawn 17 April 2012 9 May 2013
Barangaroo South & Central	Project	Determination
SISCO Pilot Trial MP10_0087	<ul style="list-style-type: none"> Trial to testing most appropriate remediation methods for the future remediation works at the DECCW declared area. 	<ul style="list-style-type: none"> 3 March 2011

